NEDA Quarterly

North East Digital Association

Devoted to Packet Networking in the North East

Volume 2 Issue #3 Summer 1991

Editor's Column

Welcome to the Quarterly. This is my sixth. Each time I do this I have more fun. Each time it gets bigger. What is this? I must be nuts. Read it. It's got some good stuff in it.

Some changes in the Quarterly this time. This is the first time with a table of contents. Doesn't this make sense? I wonder how come I didn't pay attention to the NCPA guys before. I like the way their magazine looks. More importantly you can tell what's in a back issue without having to thumb through it. This is to expect that all of you read the whole thing cover to cover when you first get it? ha-ha.

Lots of changes in the club in the past three months. If you read the minutes you'll get a good idea of the flavor of the club. Basically we're doing better than ever. Three months ago it looked bad. Right now I'm pretty happy. There was a lot of worry about system administration and summer is usually pretty slow and sloppy as far as big projects go and a packet network is a pretty big project! This winter is going to be amazing! (You can quote me) Make sure you see the article on page 5 about network changes! This will affect everybody that uses the network.

Hats off to the Great Lakes International Digital Association. They are a bunch of NEDA members who decided to create some local organization to spark things in the North West Pa, Western NY, Southern Ontario area. They've managed to drum up a huge amount of activity. They've discovered that making a local plea works and helps spur support as well as getting more people into building new services. They are holding regular meetings and working things out in a reasonable scale. Hopefully we'll see even more good stuff from GLIDA in the future. Keep the articles coming guys!

Another news item of particular interest to me. TCP/IP testing has ended. The board of directors has approved hooking up TCP/IP into the network at any point via a non-2meter dedicated point to point link. That means all a TCPer who wants to connect up has to do is come up with a TNC and a radio for his local node that will talk back to his TCP station. UHF surplus gear is cheap! Check out Deerfield and PacRats hamfests this October. There was a note in the last Quarterly on page 6 about cheap 440 commercial HTs that would do the trick.

There are new columns in this issue. *Good Questions* was the brainchild of Herb, WB1DSW and some anonymous fellows in southern Maine. A good comment was made that the Quarterly didn't address beginner issues, even issues about *getting into networking*. True enough. I hope that those questions and comments keep coming in.

Another column is *Local Packet Meetings*. Please meet and talk with local packeteers, advertise your intent to meet and send the Quarterly info on what goes on.

I'm looking for submissions for the Fall Quarterly. Address all correspondence to me either at Tadd Torborg, 20 Clinton St. Potsdam NY 13676 or phone me at 315-268-6288 or send me E-mail at my Internet address: torbortc@clutx.clarkson.edu

—KA2DEW
—NEDA Editor

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Minutes of 3rd Quarter Board of Directors Meeting July 27 1991

Cal, W1JFP opened the meeting at 10:30

Cal mentioned that anyone present who was not a voting member should upgrade their memberships before the end of the day.

Attendees

Cal Stiles	W1JFP	S	NH
Dana Jonas	WA2WNI	E	NY
Bob Lafleur	NQ1C	W	MA
Pete Brayman	KB2HPU	C	NY
Tadd Torborg	KA2DEW	N	NY
Bob Seger	WB2QBQ	E	NY
Owen	NC2C		
Wells Farr	WB3CUF	E	NY
Kevin Wright	WA2VAM	C	NY
Rich Place	WB2JLR	W	NY
Don Russ	N2CZL	C	NY
Eric	N2JHJ	E	NY

Committee Reports

Cal requested that committee reports should be reports and not discussions and that old and new business should be held until those sections of the meeting.

Secretary's report

Kevin moved that the minutes be accepted as printed in the Quarterly, Rich seconded, passed

Treasurer's report

This was included in the agenda.

Opening Balance	3319.10
Income	
Interest	31.67
Dues and HexiPus™	1606.62
Total Income	1638.29
Expenses	
Mailing Expenses	99.32
Misc. Expenses	14.95
Postage	617.72
Printing	496.75
Total Expenses	2498.74
Closing Balance	2458.65

This report is shown after Herb withdrew $1270 of his personal funds which he had maintained in the account to keep the balance in the free checking range. As our balance is staying consistently above $1000 we can now do without this and our books will be easier to keep.

Dana moves that the treasurer's report is accepted, seconded. Passed

BBS Committee Report

no report presented

Technical Committee Report

Rich reported on the BATHNY node coming on line, ALFRED, FRKVIL, SCIT as well. A great number of nodes have switched to v2.08 of TheNET Plus. It's working well and most are happy with it. Rich said that he is happy with it. There is a 900MHz 9600 baud link from ALBANY to KNOX. SYRCUS was up for a while but has since gone out. Kevin said that he has to go up to that site to activate a backup link. Rich said that there is some concern from the ROCHNY and NEWARK node ops that they are not able to access the network due to the failures at AUBURN and SYRCUS. This condition has lasted for several weeks. Hopefully this will be taken care of in the next few days. Perhaps this will spur some development of redundancy.

Rich reported that a lot of his time on packet has been spent on controlling propagation of special purpose local-use nodes, like the different Dx-Cluster access ports, BBSs and CROWDS.

Rich mentioned that some links will need attention due the fact that some of our backbones will have to be moved off of 220.

Tadd reported that the WATRTN node is not linked in due to radio problems at the site. KA2JXI is still working on it and has confidence. Tadd reported that the repeater at the Rigaud Quebec node (WQC) is now operating. He reported that there should be a half a dozen TheNET nodes linked via hidden transmitter free backbones, including the repeater within the next six months or so. These nodes may still not be accessible from the south.

Dana introduces N2JHJ, Eric who will be doing a node in Dutchess County called ULSTER. He reported that an important step in the Southern Hudson Valley area was taken when N2CJ created a CLV440 port on 441.100. Promptly upon putting this on the air N2CJ served notice to the local BBSs that are using 145.09 as a network access frequency that he expects them to move over to 441.1 by September 30th at which time he is going to request that the BBSs stop using the 145.09 CLV port. He will

Continued on page 20

NEDA Officers and Appointees

Board of Directors:

	Jim Wzorek	K1MEA
	Kevin Wright	WA2VAM
	Dana Jonas	WA2WNI
	Cal Stiles	W1JFP
	Linda Collins	NR1N
	Rich Place	WB2JLR

Appointees:

Chairman:	Cal Stiles	W1JFP
Vice Chair:	Rich Place	WB2JLR
Treasurer:	Herb Salls	WB1DSW
Membership:	Herb Salls	WB1DSW
Maps:	Cal Stiles	W1JFP
Editor:	Tadd Torborg	KA2DEW
Secretary:	Dana Jonas	WA2WNI

Board Member Alternates:

K1MEA:	Bob Lafleur	NQ1C
WA2VAM:	Don Russ	N2CZL
WA2WNI:	Bob Seger	WB2QBQ
W1JFP:		
NR1N:	Cal Calvito	WA1WOK
WB2JLR:	Tadd Torborg	KA2DEW

Technical Committee:

chairman:	Rich Place	WB2JLR
NRS:	Jim Wzorek	K1MEA
NRS:	Dana Jonas	WA2WNI
	Lindsey Collins	NR1N
	Tadd Torborg	KA2DEW
	Chris Piggot	WZ2B
	Howie Cohen	WA2TVE
	Don Russ	N2CZL
	Bob Seger	WB2QBQ
	Cal Stiles	W1JFP
	Kevin Wright	WA2VAM
	Mark Oliver	NM2J

BBS Committee:

chairman:	open	
	Jim Wzorek	K1MEA
	Herb Salls	WB1DSW

NEDA Emergency Services Advisory Committee

cochair:	Dana Jonas	WA2WNI
cochair:	Cal Calvito	WA1WOK
	Kevin Wright	WA2VAM
	Chan Eddy	KA1OU
	Jack Abel	KB2CS
	Well Farr	WB3CUF

Hexipus Project Committee

chairman:	Howie Cohen	WA2TVE

Fall Board Meeting October 26, Potsdam NY

The meeting will be called to order at 10:00AM October 26, 1991 at the Clarkson University Educational Resource Center in Potsdam NY. The meeting is hosted by Tadd Torborg, KA2DEW and the Clarkson University Amateur Radio Club (K2CC). Agenda items should be submitted to W1JFP @ W1JFP. NH.USA. The meeting is open to all NEDA voting members. Memberships and membership upgrades are available at the meeting. As this is a board of directors meeting the function of the meeting will be primarily administrative. Discussions likely to take place at this meeting include the Constitutional changes presented in this Quarterly; NRS positions; General meeting; Local meetings; HexiPus™ funding; Map making; The new "*Standards and Practices*" document.

The meeting site is 4 hours from Albany, 3 hours from Syracuse, 2 hours from Montreal or 80 minutes from Ottawa.

The meeting will be called to order at 10:00 AM.

Directions:

From Albany: North on I87 (Northway) to Exit 23. Follow route 28 to Indian Lake. Rt 30 North to Long Lake and then Tupper Lake, Pick up Rt 3 west in the center of Tupper Lake to Route 56 North on the right at Sevey Corners. In Potsdam take a left at the second light which is Main St. The Clarkson Inn will be on the left. Pass the Clarkson Inn and bare left at the light. Go through the 5 way intersection at the next light (jct 345) to South Rt 11 (right, then left). Proceed slowly for 4/10ths of a mile and turn left into campus. The turn into campus is a divided 2 lane road after the top of the hill and across from KHS Rentals.

From Syracuse: North on I81 to exit 48 (Route 342) located north of Watertown. Follow signs to US Route 11. Turn left onto Route 11 North. After you pass through Canton keep your eyes open for the Potsdam Village sign and 30 MPH zone in about 10 miles. The turn into the campus will the first road on the right, immediately after Robert's Tire. If you reach a traffic light in Potsdam you've gone too far. Go back about 4/10 mile.

From Montreal: Proceed west (ouest) on Route 20, which becomes Route 401 in Ontario. Take Exit 789 at Cornwall onto Brookdale Ave. South and cross the Seaway International Bridge. In the U.S. take Route 37 west (through Massena), then Route 56 south to Potsdam. In Potsdam take a right at the third light onto Rt 11 south. Travel slowly (40KPH) to 500 meters past the next light (jct 345) and turn left into the campus. The turn is on top of the hill, across from KHS Rentals and is a divided two lane road.

From Ottawa: Proceed south on Route 16 to Prescott and cross the Ogdensburg-Prescott International Bridge. In the U.S. take Route 37 south to Ogdensburg, then Route 68 east to Canton. From Canton take U.S. Route 11 north to Potsdam. Keep an eye out for the Potsdam Village sign and 30 MPH speed limit about 14 kilometers after leaving Canton. Turn right into Clarkson's 2 lane divided driveway 70 meters after the village sign. If you reach a traffic light you've gone too far. Turn around and go back about 500 meters to the driveway.

On Campus: After turning onto the driveway proceed straight until the road bares left. Follow the road through the parking lots looking for the Andrew S Shuler Educational Resources Center (E.R.C.) which is the third building on the left and has a glass front. Turn left into the parking lot which is between the entry road and the E.R.C. The lot entrance will be after the parking lot. Go into the entrance on the right hand side of the building. The meeting room is on your left at the front of the building. Look for the K2CC or NEDA signs.

Talkin

Talkin on 146.925 -600 or in case of problems, on 147.39 +600.

Overnight info:

Potsdam (less than 5 minutes away)		
Chalet Motel	Rt 11 West	315-265-8400
Clarkson Inn (best)	Main St.	315-265-3050
Nomad Motel	Rt 11 West	315-265-6700
Potsdam Motel	Rt 11 West	315-265-7200
Smalling's Motel	Rt 56 North	315-265-4640
Wedgewood Motel	Rt 56 North	315-265-9100
Canton (15 minutes west)		
Cascade Inn	Rt 11	315-386-8503
St. Lawrence Inn	26 Court St.	315-386-8587
Best Western	Rt 11	315-386-8522
Massena (30 minutes north east)		
Super 8 Motel		1-800-843-1991

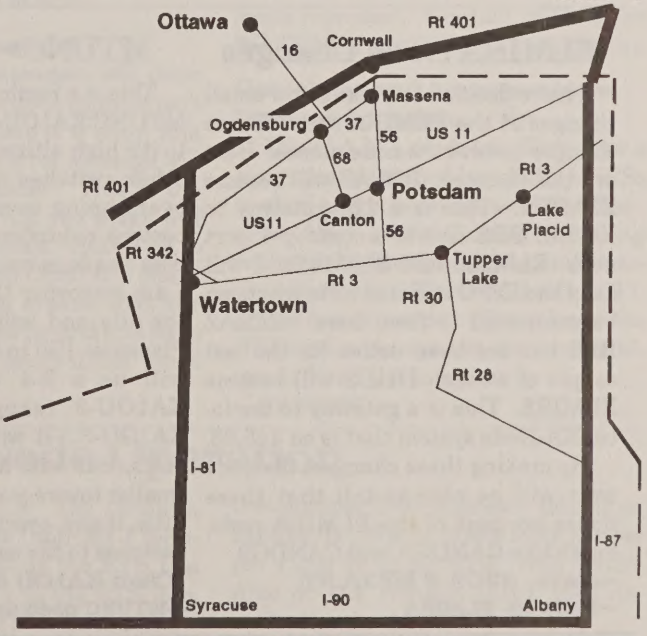
Local Attractions

Montreal is one of my favorite cities and is only two easy hours of driving from Potsdam. In addition there are the following local items. Phone me or write me for details. My address is in the editor's column.

Remington Museum; Dwight D. Eisenhower Lock; St. Lawrence Seaway F.D.R. Proj. Visitor's Center; Adirondack Museum and park; Boldt Castle; Shipyard Museum; Minna Anthony Common Nature Center; Northern NY Agricultural Historical Museum

—KA2DEW

—Host, Fall Board Meeting



Local Meetings

It's Maddening

That's what it is. I see a trend. There is a curve where people are interested in packet but don't see that it is very useful or worth putting much time into it because it doesn't work very well. There is no progress.

A visionary notices that the reason that things aren't happening because people aren't working together. He promotes and through sheer force of will gets a bunch of people working together to make something happen. They get together and make it happen. The excitement is contagious. Lots of people work towards making it happen. Progress is intense.

Now things get big enough that the guys who were motivated have spread themselves so thin that progress can't happen any more. They still have there meetings but now it's a big thing. It's not local anymore. The little radio club grew up. Progress slows. The fellows who were in it from the beginning start dropping out. Some of the new talent looks at what is around and are content. They don't even talk about it. Time passes. No progress. What happened? Why didn't the guys who made it work keep promoting it so the rest can find out? What happened when they did? This happens all over the place. I noticed it when I was just getting into repeaters. I noticed it when I tried to start a BBS. I noticed it when doing packet networking. Neither I nor my compatriots know how to motivate people to motivate people!

Some of you are reading this and saying, "What's he *talking* about?", or "What *is* this motivation thing?". What I'm talking about is rallying other people to the cause. Whatever cause. In this case I'm talking about packet radio networking. What I'm seeing is that there is a lot of knowledgeable people out there who know exactly how to apply the technology that NEDA represents and make it work and work well. Many of you are waiting for that month with the fifth paycheck to make it go. Some are waiting for three day weekends to fix up something. On the other hand there are people out there who would love to play with this stuff and don't have a clue. Some of them live in great places or have money or time to spare. Here's a solution.

Call a meeting. Call lots of meetings. I'm not saying that you have to make proposals and spend money. I'm just saying call a meeting. Open it up to all comers. See what happens! There are people out there who don't think that anybody else is interested and don't know about you. Start something. Advertise it on the BBSs in your area. Give them a month or so. Do it often. Don't get carried away with making sure that everybody can make it. Just make it public and see what happens. Spread the word. Do it regularly. Ham radio meetings are great fun. Especially those that don't have business sessions. Don't ask people to go too far. Just open it up. Talk about packet a little if you would though. Send me anything that you decide and if you can make your meetings regular enough send me info on it so I can advertise your meeting in the Quarterly. By all means send me the meeting dates of already existing packet clubs!

Now that you are having meetings make sure that everybody knows how to use all of the toys that everybody in your area has put together for each other to play with. Collect map information too. Collect and spread around help sheets for BBSs, DOSgates, TCP/IP and whatever. Don't feel that you are being left on your own about this. NEDA exists to help you promote packet. Ask for stuff. If you need something made in the way of documents or whatever please ask. Also spread maps around. If you have an idea for some fact sheets send them to me. I can publish in the Quarterly or mail them to you direct. No doubt NEDA would like to print good stuff for common distribution as well. We can always ask! I'm also looking for good stuff for the new Annual. I'd like to have a help sheet for every kind of packet system on the air in this Annual. How can you help me? Send me stuff!

—That editor guy

ELMIRA Node Changes

I have decided to make a few small changes at the ELMIRA node. These changes involve the node names. Here are the changes: BBSAZ will become ELMIR2. This is a 220 gateway to KC2AZ BBS and to a nearby 2 port node (ELM220 and ELM145). I will keep the INFO updated as to what can be connected to from here. KC2AZ BBS has not been active for the last couple of weeks. HHDS will become ELMIR3. This is a gateway to the local KA-Node system that is on 145.03.

By making these changes, the node user will be able to tell that these nodes are part of the ELMIRA node, much like CANDGA and CANDG2.

—Dave, N2DS @ WF2A.NY
—Node op, ELMIRA

MTUNC>>>CNCRD

This is a reminder to all of you that MTUNC:KA1OU-3 is going QRT. Due to it's high altitude and the advent of other switches on 223.58MHz with overlapping coverage, MTUNC has become redundant and it's LAN purpose has been compromise. Therefore, I am removing that equipment from the site and will be relocating it to Plausawa Hill in Concord, NH. There will be a 3-4 week delay before KA1OU-3 reappears as CNCRD: KA1OU-3. It will still be an 223.58 MHz, but will have a considerably smaller coverage area and should have little, if any, overlap with 223.58 MHz switches to the south.

_Chan KA1OU @ WA1WOK.NH
—MTUNC node op

New HANOVR Node

A new node has been placed in operation in the Northeast. The node called HANOVR:W1ET is located at the Thayer School of Engineering, Dartmouth College, Hanover, NH on 144.99. The node is connected to the network via a HTS free 440 link to VNH. This node should provide a platform to test the theory, *"Put the LAN Port in the worst location in town and there will never be any hidden transmitters"*. The roof of the Engineering building isn't exactly the worst place in town but Hanover is quite well surrounded with a granite shield. In other words, the granite to signal ratio is quite high.

—Cal, W1JFP
—president MAPRA (the VNH people)

Network Changes!

The NEDA network and all nodes that conform are making a major parameter change. As of this writing none of this is final. Read the minutes. The key change is to reduce the number of hops that a node will be visible. This has several advantages and a few obvious disadvantages. Read on.

What's probably going to happen is that the number of node hops will be reduced as I said above. The practical implications of this are several:

- The nodes list will be shorter;
- Connecting far away takes a little more work;
- "Failure" messages will be faster;
- The NRS's job pressure is dramatically reduced;
- Nodes of other than TheNET might be able to be used;

That's the short of it. Now here's a little bit of explanation. Read the minutes! That will help you understand how we got here.

NEDA operates a group called the NEDA Technical Committee. In the technical committee is a group of hams called NEDA Regional Sysops or NRS. Those were the guys that policed the network nodes to make sure that all of the nodes that showed up in the network were managed by NRSs. They also made sure that the nodes were set up with parameters to allow equal access by all users. This was a thankless job.

NRSs were burning out. This was caused by the fact that node propagation has given rise to egotism. If you propagated you were good. If you didn't then somebody was sitting on you. That was not the method or intention.

A second problem developed. There were getting to be too many nodes showing up at each node site. Most were connectable but the list was just too darn long and it wasn't easy to keep track of what nodes were being worked by what paths or who was maintaining what nodes. This also lead to a TheNET problem. TheNETs don't work well with too many nodes in the nodes lists. The answer to the question "why not" is longer than I want to get into in this article. See the Resource Manual published in the last issue.

A solution was reached at the last board meeting. The suggestion was made that we only need NRSs because the club wanted to have all nodes in the network show on all of the other nodes in the network. If the node propagation distance was lessened from 18 hops to 7 hops the implications of parameter changes on each node are lessened dramatically. No more need for NEDA 'parameter police'!

Exactly how this change is to take place has not been decided yet. I expect that a decision will be reached around the end of September. That's probably about when most of you will be reading this. Look for bulletin messages on your local BBS sent to NEDA. Do a L> NEDA to find these. Read the minutes!

Shorter nodes lists

In order to connect further than a few nodes away you'll just have to connect to one on the way. For instance. To connect from HOMER to KNGSTN node right now you connect to HOMER1, connect to KNGSTN. What you'd have to do after the change is connect to HOMER1, connect to CHSTR, and then connect to KNGSTN. Once you get connected all the way your messages will pass back in forth just as fast as when you could connect all the way at once.

Faster failure messages

"Failure with" messages will come up must faster. If a node connect isn't going to work because of a down link or power outage the error message will come back must faster. This is the maximum connect hop you make will be of a shorter distance. HOMER1 is closer to CHSTR and CHSTR is closer to KNGSTN. This means that the timers can be set shorter and still have the system work properly under worst load conditions.

Non-TheNET nodes

Nodes probably won't all have to be TheNET. This is very important as new technology that is better than TheNET is coming around. One of these is called PacketTen and is covered by an article in this Quarterly. This change would also allow G8BPQ nodes to play a more major roll in the network (yay!). I'm looking forward to this. Be careful though. TheNET nodes have an advantage over G8BPQ nodes in that there are more CPUs and a stack of TheNET nodes can be faster than a G8BPQ node if the G8BPQ is run on a slow computer. MSYS is particularly slow on 8088 machines.

NRS position

NRS responsibility is drastically reduced. Before if a node op made a tiny mistake node propagation could get pretty messed up over a huge area and it might take hours to fix the problem. With the reduced broadcast distance changes have much less of an effect, are easier to fix, and some things might be left unadjusted because the effect is so reduced. Read the minutes. At this time the future of the NRS position is open.

Standards and Practices

A new document will be produced. This document will be published regularly and will be a living document. All input is welcome. The document will describe how NEDA relates to networks. The document will describe, in detail, what the NEDA maps represent. Contact WB2JLR or WA2WNI if you'd like to work on this.

Guidelines and Agreements for Network Interface

The G.A.N.I. is dead. This was a paper that described how NEDA NRSs worked and how nodes would be managed. Parts of the G.A.N.I. are being replaced by the Standards and Practices document. Parts of the G.A.N.I. are no longer needed. The roles of the NRS and node ops are drastically altered. Read the minutes.

—KA2DEW

Bug! MFJ's in Node Operation

MFJ TNCs wired incorrectly may be causing massive slow-ups in multi-port nodes. A miss-documented pin on the 25 pin connector could be causing collisions on the matrix of nodes with more than two TNCs. The Octopus, HexiPus documents (and MFJ manual) describe pin 20 as the RTS line when actually pin 4 is the RTS line. This causes some TNCs to not know that another TNC is already talking on the Matrix. The fix is to simply jumper pin 4 and 20 on all MFJ TNCs' DB25. Also do the Wink-N-Blink mod described in the Annual. **—Editor**

Notice to all members

The following, as per the Constitution, is official notification that Constitutional Change Requests have been filed with the NEDA board of directors at the preceding board meeting. Comments on these submissions should be directed in writing to the club PO Box before October 20th, or mailed to the editor to arrive before October 26th (see address in Editor's column). Additionally comment could be made to any of the board members or at the October board meeting. Here are the complete text of the four submissions:

Constitutional Change Request

Topic:

Changes to the Constitution

Presented:

July 27 1991

By:

Tadd, KA2DEW

Brief:

Add detail to "Changes to the Constitution"

Specifics:

Replace "Changes to the Constitution" with the following text.

Changes to the constitution may only be made by the following process:

At a regularly scheduled quarterly board meeting a proposal for a change is submitted in printed or typed form (8 copies) to the board, the editor, and the secretary. The item must be presented in person by a NEDA voting member.

The format of the submission is in bulleted sections. The following sections must be included: TITLE, PRESENTED, BY, BRIEF, SPECIFICS, PURPOSE. The page is headed with "Constitutional Change Request". TOPIC is followed by one line which identifies the change request. PRESENTED is followed by the date of the board meeting. BY is followed by the name and callsign of the author. BRIEF is followed by a single paragraph description of the change. SPECIFICS is followed by a paragraph by paragraph description of the changes including reference section and paragraph numbers. PURPOSE is followed by a justification for the change. A sample change is available from the club.

Purpose:

The current version of the constitution is rather vague in the requirements for a change. This will hopefully clear up any misconceptions.

Constitutional Change Request

Topic:

Add Section Numbers

Presented:

July 27 1991

By:

Tadd, KA2DEW

Brief:

Add numbers to detail the Constitution

Specifics:

Add numbers to each section as such:

1. Purpose of this Article
2. Officers
3. Appointments

etc..

Describe paragraph subparts as lower case letters

Purpose:

This would make it much easier to refer to sections of the constitution. These numbers could be used for all correspondence.

Constitutional Change Request

Topic:

Election Balloting

Presented:

July 27 1991

By:

Tadd, KA2DEW

Brief:

Make annual elections be by mailed ballot instead of at the annual meeting.

Specifics:

In the section "Officers", replace the text "Three of the directors are elected at each Annual General Meeting" with "Three of the directors are elected annually"

In the section "Membership Privileges" replace the text "and run for office at the annual general meeting" with ", run for office annually and vote for officers by mailed ballot"

In the section "Annual General Meeting" replace the text "The chief administrative function of the Annual General Meeting is to elect 3 new board members" with the text "This meeting has no administrative function. The purpose of the meeting is to allow all interested packeteers to meet the officers and to perform demonstrations and training. Specifics of the activities at the Annual General Meeting will be discussed in the bylaws".

Replace all of the text in the section "Elections" with the following text:

Elections are held by mailed ballot after the October board meeting. Immediately after the October board meeting the board meeting attendance of each member, over the previous year's board meetings, are tallied. Any voting member who is paid up for two years from the end of October of the current year, who has attended half of the year's board meetings, and who are not already in the middle of a two year term are automatically nominated and are listed on a ballot.

This ballot is sent to all NEDA voting members complete with a self addressed stamped envelope. The envelope also has a return address label with a note stating that the return address must be filled in for the ballot to be counted. The ballot includes instructions that the voting member should order all of the listed people in ascending order, 1 for first choice, 2 for second choice... This way the results will still be meaningful if one or more nominated members are unavailable to fill the positions. The ballots are mailed to the club POBox and then counted by the recording secretary or one of the board members whose term is not expiring this year.

The ballots must be mailed out to all NEDA voting members within two weeks of the board meeting. They must be returned to the club POBox within five weeks of the board meet-

Continued on page 7

Change Requests from page 6

ing. Results are included in the Quarterly or are mailed out separately to all members to arrive at least a week before the winter board meeting..

The results include the following statistics: Total number of ballots sent; Total number of ballots returned; List of all nominees; List of the three new board members and list of nominees who abstained but who had a higher vote than the selected board members.

If three new board members are not chosen by this process then a board member may be chosen by consensus of the founders and the existing board from those voting members who were previously board members and who ended their term as board member in good standing. If there still are not three eligible new board members then the club must be dissolved.

In the section titled "NEDA Quarterly" add the following paragraph after paragraph 1: In the Fall edition of the Quarterly whatever results that are available from the annual elections are printed. This may include the nominees or the final results.

Purpose:

The current version of the constitution is rather vague in the requirements for a change. This will hopefully clear up any misconceptions.

Constitutional Change Request

Topic:

Annual General Meeting

Presented:

July 27 1991

By:

Tadd, KA2DEW

Brief:

Remove the requirement for the Annual General Meeting.

Specifics:

Remove the section "Annual General Meeting"

This is dependant on the change request on Balloting by mail being approved.

Purpose:

The Annual General meeting may be a good idea but there is no reason to require it in the Constitution once balloting has been created.

—NEDA

The Exposed Receiver Syndrome

By now you have probably heard of the Hidden Transmitter Syndrome (HTS), and NEDA's policy of insisting that all backbone links be HTS free. The hidden transmitter problem is the scourge of low cost backbone attempts. A related but less well known problem, which can have a detrimental effect on hilltop User Ports, is the Exposed Receiver Syndrome (ERS). The Exposed Receiver is the receiver at a User port that hears much more than it needs to; it is "exposed" to signals working other nodes in distant communities.

The problem with nodes experiencing ERS is that User port TNC defers to the distant signals, waiting unnecessarily before sending. The TNC does not realize that these other signals that it hears are so distant that it could safely transmit to its local users without causing interference to the distant stations. In the meantime, the local users' TNCs may retransmit because of the unexpected long wait for an acknowledgment. This further adds to congestion on the channel and slows things down.

What does this mean for you, the operator (or future operator) of a NEDA node? First, this shows the need for small, local coverage nodes ("nodes in homes" as Tadd calls it). As activity grows, the packet network will benefit from a "cellular" approach, where several local coverage nodes are linked together via a HTS backbone, rather than trying to cover the same area with one massive coverage mountaintop node. Second, the User port frequency should be chosen to reduce ERS from other nodes on the frequency. This means that wide coverage area nodes should be on less popular frequencies, as opposed to say 145.01. High power output and high gain antennas may actually hamper the usefulness of your node rather than enhance it. If the node is not centered on the intended coverage area, then use a directional antenna to target your audience and limit your exposure.

Phil Karn, KA9Q, proposed a software solution to this problem in a paper at the last ARRL Computer Networking Conference. This may be a long term solution, but it would not be compatible with existing systems now.

Consider adding a CTCSS encoder/decoder to the node. If 2 nodes sharing the same frequency each had CTCSS encoders, they could each sense the presents of the sub-audible tone from the other node and then squelch the receiver. (The sense of the squelching is the reverse of what is usually done with CTCSS). When a local user started transmitting he would capture the receiver at the local node, thus ending the sub-audible tone and allowing the receiver to open. Since each nodes' receiver would stay squelched whenever the other node transmitted, the nodes would never end up waiting for each other before starting to send.

—Rich WB2JLR @ WB2WXQ.ny
—Chairman NEDA Tech Committee

G8BPQ Version 4.04 HexiPus™ Interface Bug

We had a problem interfacing G8BPQ's switch software to our HexiPus™ which everyone needs to know about. As you probably aware, we have had numerous successes in mating a BPQ equipped computer direct to a node stack. There now appeared to be a "difference" in BPQ's handling of such things in his latest version, 4.04 causing the BPQ code and the node stack to stop talking to one another. The previously released version of BPQ (version 4.03a) worked just fine. Upgrading to version 4.04 using the same config file (there doesn't appear to be any difference in BPQCFG from 4.03a to 4.04) brought everything to a halt. Reinstalling 4.03a, resurrected the complex entirely.

A letter from G8BPQ to N2JHJ dated December 12 1991 said that a fix in 4.04 that allows for telephone modem use made it necessary to have the CTS connected to the RTS on the PC side of the HexiPus™ - PC interface cable. The fix is to tie CTS to RTS at the PC's connector. This will allow use of BPQCODE version 4.04 with the HexiPus™ once again.

John, G8BPQ, sent his apologies for overlooking adding this change to the recent BPQCODE documentation.

—Herb WB1DSW @ WB1DSW
—NEgate/BBSDSW/KNGSTN

Good Questions

Hi and welcome to my new column. This column is directed at answering some of *those* questions. I'm afraid that some times the answers aren't easy and sometimes the answers aren't possible. I'll try to cover as much ground in answer to every question as possible so I'm as helpful as possible. If I missunderstand so bad as to not cover what you, the question maker meant, then please ask again.

I'm also afraid that I'm not really one hundred percent familiar with all modes of packet operation. It's amazing that in ten years packet radio has gotten almost as complicated as the rest of ham radio put together but there you are. It has. So, I'll try to be honest when we're not sure of the answer and I'll try to get other's advice in those cases as well. I'll also try to present differing opinions on answers if they exist.

The answers to these questions are thus generated by a whole bunch of people. Usually Tadd will probably get stuck with sorting through the answers as although he won't be burdened with the entire bunch of questions he's the guy that has to format the mess **[Oh Nooooooooo!:ed]**.

So.. here goes...

Q: After completing a call to a distant station several node hops away, is it preffered to do a Ctl C, Disconnect, or to back out using the Q or Bye command to tell the other station to do the disconnect?

A: As far as TheNET nodes are concerned you can do it either way. The advantage of telling the remote system to hang up with the Bye or Quit command is that the remote system gets a chance to send you a closing comment. Imagine if you will that you have connected to a BBS and now you are disconnecting. Just as you did your ctl C- D command the sysop of the BBS comes on with a "Hi Harry". You'd never see it because you are already gone!. If you are not connected to a BBS but are still connected to a TheNET at the far end, you can go ahead and use ctl-C Disconnect. It will save you time and actually takes fewer packets.

Q: How can you best determine which node has the ability to get you from one frequency to another?

A: The way we usually use the packet network is to figure out what node the guy we want to talk to is available from, and then go about getting him by going into the local node, across to the node that my friend is on, and then out. In most cases nodes will only have one two meter frequency. A good study of the maps is the best way to figure out how to navigate.

From the phrasing of the question I don't think that I'm answering you. Hmmm. Elsewhere in this issue is an article about the KNOX node. Study the diagram and see how it fits into the ENY user map. Maybe that will help.

Q: In your roster for W1HJF you list his BBS as UNK. What does that mean?

A: W1HJF (Larry) has supported packet (and a lot of amateur) activity in this area for a long time. Unfortunately, Larry doesn't have much time to get on the network, although he is a NEDA member. As such, he doesn't have a "home BBS". The listing that is in the Roster is a mistake that has never been corrected. It made sense at the time. We wish Larry would get on but...

Q: While in Monitor mode I see on my screen a line such as: **KA1NNN-3*>N1DXM** ***The *, I believe, indicates that I am copying KA1NNN-3 direct. However when I try connecting to KA1NNN-3 (or CAM) I'm unable to connect. Usually if I can hear a station I can work it. What gives?***

A: There are two gross effects that are present on packet that aren't present on voice modes, that might explain this problem.

Hidden Transmitter Syndrome (or HTS) is the case where there are other stations that KA1NNN-3 can hear that you can't, and that are transmitting when you are. Even if you are stronger than the interfering station you still might not be 100% copy.

Exposed Receiver Syndrome syndrome is the case where KA1NNN-3 receives you just fine but is getting so much stuff on it's frequency that it doesn't have the time to answer you. Some of the time that it might allocate to answering you is spent waiting for the channel to be quiet so it can key up.

NEDA recommends users link to their nearest user port and use the backbone to get to places rather than trying to link long distances across the user frequency filled with HTS. This of course assumes that the network builders have afforded you with the capability. It may be time to try to spur network building activity in your area.

Q: I recently tried connecting to KC1FF-3 and instead of getting his BBS sign-on message I got the following line several times: FRMR sent: 1F 12 03 What does this mean?

A frame error, or FRMR, indicates that a TNC received an 'impossible' packet. This can happen if there is a computer hardware problem in either your TNC or the station you are talking to. Another way this happens which is much more common is where either your call or the other station's callsign is in use twice within range of each other. In that case both stations using the call might try to respond to the same packet.

Example. I'm connected to you from my car. I left my home station on but I've forgotten this. I send you a connect request. You answer. You send me a hello. My home station hears you and tries to disconnect you. Your station (now totally confused) sends a disconnect acknowledge. My station declares a frame error.

Q: I have noticed lately, that there has been a lot of retries on the frequencies. This has been by a lot of hams, including myself.. I would like to know what the settings are for the following commands on the TNC.. I realize that there is variations in the commands, but would like an example setting for each.

A: In packet radio if there is more than one station on a channel trying to send traffic when the stations can't all hear each other there will be problems with retries. Keyboard users get abused by this especially when tireless automated machines are trying to dump data onto your channel day in and day out.

Any configuration of most of the timing values that you can use will be dependent on what everybody else uses on the channel. A few of the timing parameters are dependent only on your station. Let's do them first.

Axdelay

This value is the amount of time the repeater you are working will stay

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New Links in NJ

Welcome news from New Jersey! There are now three sets of nodes in lower Orange County New York, New Jersey and eastern Pennsylvania that have point to point backbone support. KA3ODJ has two TheNET nodes connected by a UHF link. Additionally there is a set of three ROSE switch sites connected by 50MHz and 220MHz point to point links and a set of four ROSE switch sites connected by 440MHz point to point links. See the map on page 47. NX2P has reported continuing growth and enthusiasm in the Mt. Pocono, Lk Mohawk, Greenfield system. He predicts contact with dedicated link backbones in the Newburgh area (CLV) in the next year. Those three nodes are linked at 2400 baud. The other system, in Eastern NJ, has two multiport ROSE switch sites and two servers link together by UHF point to point links. The servers are tied into their local node sites at 9600 baud. Interconnection between the two networks is imminent but no radios were allocated for the purpose at last count.

Both of the New Jersey systems are entirely ROSE based and are heavily influenced by the Radio Amateur Telecommunications Society. Way to go guys and gals!

—Editor

New Node in Watertown NY

The Watertown New York node is now on the air and linked into CANTON via a 440MHz point to point 1200 baud backbone. The node, WATERT: KA2QJO-5, was put up as a joint effort by several hams in Watertown and in St. Lawrence County. May miles driven by KA2JXI, Roger, contributed highly in this effort.

This node is the fourth in a entirely point to point backbone supported system which includes POTSDM, CANTON and OGDENB, and the second on a 'LAN' channel with no other nodes or servers. This node's LAN port is on 144.97.

The Watertown node has a 50Mhz link radio aimed south hoping for a connection to CANDGA node near Rochester.

—KA2DEW

KNG111 changes to KNG223

On October 15th the KNG111 node in East Kingston NH will be renamed to KNG223. This is to follow with it's frequency change (from 221.11) which has already occurred.

—WB1DSW
—KNGSTN/KNG111 node op

Local Packet Meeting Announcements

This is a new column which will appear every Quarter as per the minutes of the most recent meeting. One of the problems which was revealed during discussion was that there were very few local packet groups, in the area supported by NEDA. This isn't good. NEDA isn't meant to chase out or eclipse local packet groups. There is just no way to handle meetings where people would have to drive to a central location. It's bad enough doing the four board meetings a year and one Annual meeting. What is needed is local face to face meetings. The Mt. Ascutney Packet Radio Club is a good example. Those guys have some excellent discussions at their meetings.

Some groups exist that are not in the sphere of the NEDA network. At least a couple of these groups are afraid that NEDA will dissolve their groups if they make motions to work with NEDA. This is not true. The board of directors of NEDA thinks that we need *more* local clubs, not less.

So, every Quarterly will have a list of upcoming meetings and hopefully a list of past meetings and reports of what went on.. Please send this information to me as early as possible or as late as necessary. Obviously it would be better for the Quarterly if meetings were planned well in advance or regularly scheduled. The purpose of listing them in the Quarterly is not because all of your people should see it here. I hope that your meetings are well publicized via packet BBSs, DxClusters and at general ham radio club meetings.

St. Lawrence County NY

Saturday, October 19th there will be a packet meeting in Potsdam NY. Discussion will at least include the recent connection of the WATERT node to CANTON and acquisition of equipment for other nodes or services. The meeting is to be held on the Clarkson University Hill Campus in Potsdam. Check the KA2JXI BBS for directions and time of the meeting. Talk-in will be on 147.39 or 146.925 as a backup. Everybody is invited and educational materials will be handed out. A probable food or coffee gathering will occur afterwards. Contact KA2JXI @ KA2JXI, or inquire on Q-Net on 146.925 at 6:30PM daily, for information.

RATS, Northern New Jersey

The Radio Amateur Telecommunications Society hosts a general meeting each month on the second Thursday of the month. The meetings are held at 8PM at the Howard Johnson's on Rt 3 in Nutley. Most of the group shows up for dinner at 7PM. Contact N2DSY, Gordon @ N2DSY.NJ or at (201)-387-8896.

MAPRA, VT/NH border

The Mt. Ascutney Packet Radio Association meets every other month. The meetings dates are set at the previous meeting but they are always held on Sunday and usually in Newport, New Hampshire. Contact N1CB @ WA1WOK or at his PMS N1CB-4 from the VNH node for more information.

Other Meetings?

As this is a new program I don't have information on other meetings yet. I'd like to hear from GLIDA, VPRO, SEPA and any others that might have meetings where packet people might get together. If you don't have a group in your area you might want to start one. If your group is successful enough to overflow your living room then you've obviously done a good thing! Read the 'Local Meetings' article on page 4 for more ideas. Even if your meetings aren't scheduled far enough in advance, or at the time of a Quarterly release I'd like to print contact info on how someone in your area can find out about your meetings.

If you can please send a paragraph about what went on at your meeting, how many attendees, where it was held, what satellites you guys are launching, what kind of donuts you ate etc..

Send info

Send your info to KA2DEW @ W1NY. I can accept this info right up to press time.

—NEDA Editor

KNOX:WB2QBQ Node

Bob, WB2QBQ owns and operates the KNOX node in Knox New York. The node is located in and around his house. He is currently operating seven radios and antennas for the node itself and other radios and antennas for packet, FM and HF. The system has sprung up in a very short time, from a digipeater in 1989 to a seven port node in the summer of 1991. Bob spends a great deal of his ham radio time tinkering with the radio and antenna systems as well as playing on packet. He also derives much enjoyment from having his system used by others as is evidenced by the amazing light display on the TNCs as the node is operating. Visitors to his site have remarked at how the action never seems to stop.

Servers that are almost always using the KNOX node as a through path include the K2TR DxCluster, WA2TVE BBS, WA2PVV BBS, and WA2UMX BBS.

Recent additions to the node include a 900MHz 9600 baud link to Albany. The pre-existing 440MHz 1200 baud link is still in place but will be reallocated once testing on the 900MHz link is competed. Bob expects to link to another site using the already in place 440 gear.

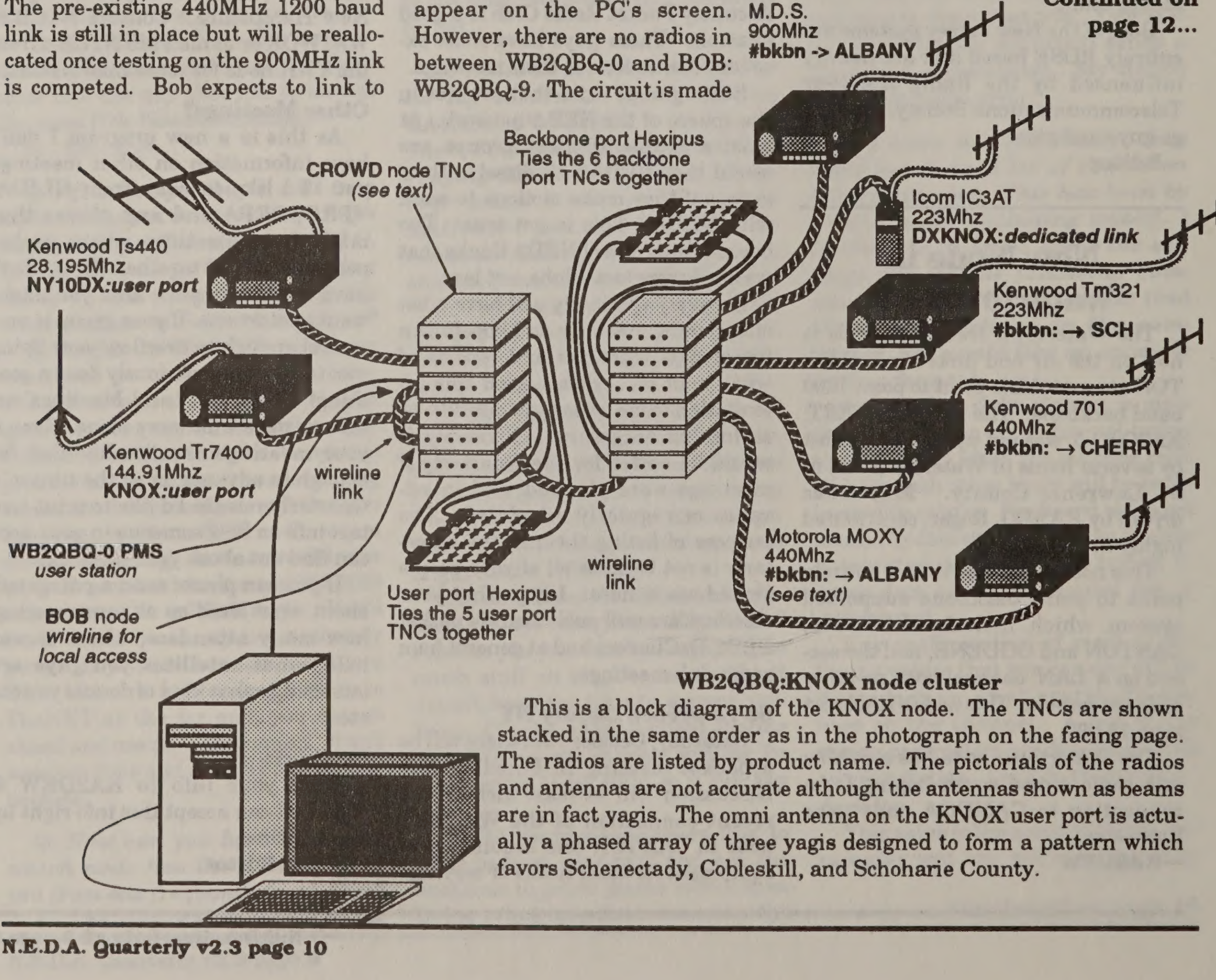
A recent problem that Bob had is that his TS-440 HF radio has failed. As of this writing that radio is on the way to Kenwood but will hopefully be back on at or shortly after publication date.

Wireline Links

KNOX node has two separate wireline links. The first connects the home station with the network node. Bob's home station is the third TNCs down in the left stack as seen in both the photograph and the diagram. The TNC has regular PacComm PMS software and is hooked to Bob's mini-tower PC. The radio port, however, is hooked directly to the radio port of the BOB:WB2QBQ-9 TheNET TNC. Stations who connect to KNOX and do a nodes list will see the BOB node. If you connect to the BOB node and then connect to WB2QBQ you will be connected to Bob's home station and the "*** Connected to" message will appear on the PC's screen. However, there are no radios in between WB2QBQ-0 and BOB: WB2QBQ-9. The circuit is made with a few 12 inch pieces of wire connected to the modem headers of the two TNCs. That connection is described in the *SHERMN node* article elsewhere in this issue.

The other wireline link at the KNOX node is between the two separate node stacks. The right hand node stack consists only of backbone links and the DXKNOX node. The bottom TNC in the right hand stack is connected to the other five TNCs through the HexiPus™ but is not connected to a radio. Rather it is connected, via another wire link, to the bottom TNC on the left hand stack. Traffic that travels across the backbones through Bob's house, but that is not destined for the KNOX node, travels from radio to TNC through the matrix, to TNC and back out the radio, without ever crossing that wireline link. The only traffic that goes through the wireline link is traffic that goes to the BOB node, the KNOX node, the NY10DX

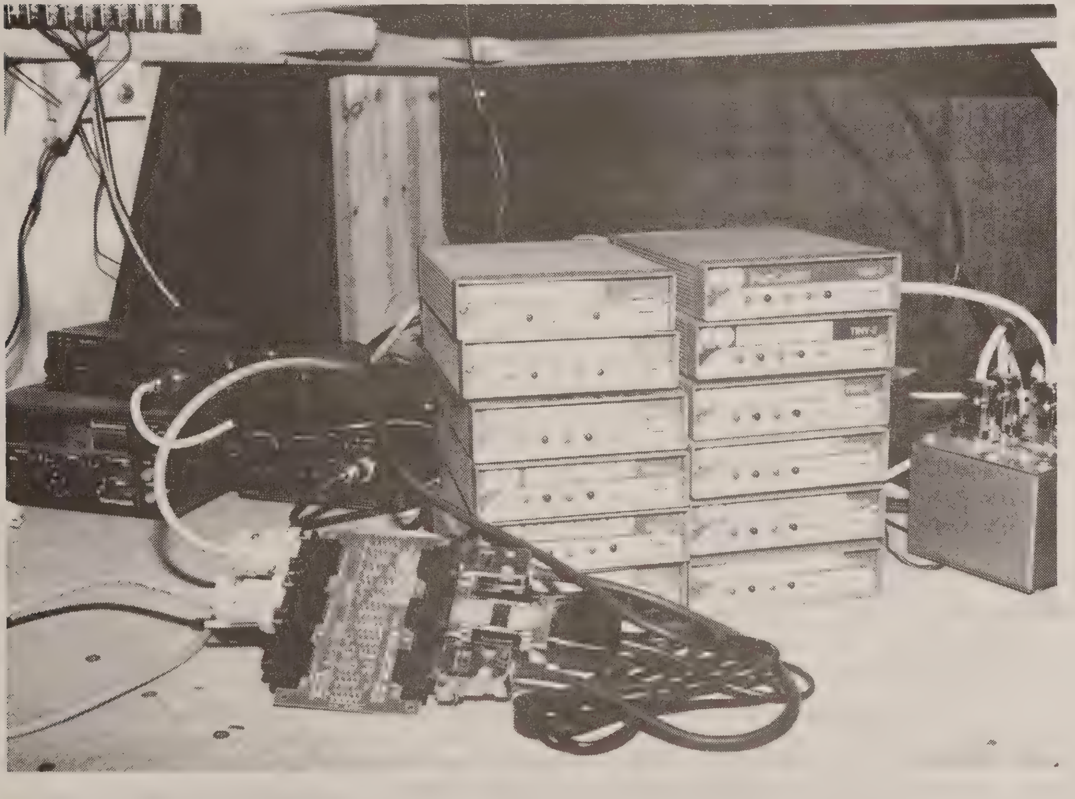
Continued on page 12...



WB2QBQ:KNOX node cluster

This is a block diagram of the KNOX node. The TNCs are shown stacked in the same order as in the photograph on the facing page. The radios are listed by product name. The pictorials of the radios and antennas are not accurate although the antennas shown as beams are in fact yagis. The omni antenna on the KNOX user port is actually a phased array of three yagis designed to form a pattern which favors Schenectady, Cobleskill, and Schoharie County.

Dana, WA2WNI (left) and Bob, WB2QBQ, shown here holding down Bob's Taddbench. I'm told that if they let go that it'll up and move to Potsdam!



Close-up view of the KNOX node TNC stacks

SHERMN Node and Wireline Linking

The information presented on the facing page was transcribed from a block diagram and info/nodes listings supplied by Franklin. The existing setup as of the beginning of September at the SHERMN node did not include the wireline link between the two matrices. Rather all of the radio TNCs were hooked up in one stack. Franklin supplied the following Routes listing:

```
#GLIDA:N2JYG-11} Routes:
> 1 SHERMN:N2JYG-3 230 1
  1 WPADXC:N2JYG-6 230 1
  1 #GLIDA:N2JYG-14 230 20
> 1 #GLIDA:N2JYG-15 230 25
> 0 ERIEPA:NM3G-2 230 2 !
  1 #GLIDA:N2JYG-5 230 1
  1 #GLIDA:N2JYG-12 230 17
```

Franklin also supplied the information that he used to make the wireline link go. He said:

> The TNCs for the wireline link are working on the bench and operating to full speed. The RS-232 port is 9600 baud as well as the radio port. TxDELAY is set for 1 on the radio port. The EPROM was burned in as a full duplex TNC, Parm 33 set to 1. All other parms are standard backbone parms. The following mode was done to the TNC:
>
> - Set radio port to 9600.
> - Set RS-232 port to 9600.
> - Cut the jumper on the modem disconnected header from Pin 17 to pin 18.
> - Use a 3 wire jumper about 12 inches long.
> - Connect Pin 17 on TNC A to Pin 19 on TNC B.
> - Connect Pin 19 on TNC A to Pin 17 on TNC B.
> - Connect grounds on the two TNCs together.

Franklin asked that I supply the info on connecting DCDs on the two TNCs as his setup didn't do this. Under heavy load collisions would occur without DCD hooked up. This is important. Also the LED for DCD won't work. Here is the required circuit:

Both Tiny 2 and MFJ:

1 Move the DCD select jumper to external DCD. Make sure the DCD light works once you are done!

2 Use a 74HC04 Hex inverter IC (74LS04 is OK substitute). Radio Shack part #276-1802 looks right. Make sure it's a LS or HC part though. You never know from those guys.

3 Connect pin 14 of the IC to +5 in the TNC. Pin 14 of another 14 pin 74 series chip in the TNC is a good place.

2 Connect pin 7 of the chip to Ground. Again pin 7 of another 14 pin 74 series chip is good.

3 Connect pin 5 of the modem header of TNC A to pin 1 of the chip.

4 Connect pin 5 of the header of TNC B to pin 3 of the chip.

Tiny 2 steps:

5 Connect pin 5 of the 5-pin DIN from TNC A to pin 4 of the chip.

6 Connect pin 5 of the 5-pin DIN from TNC B to pin 2 of the chip.

7 Connect pins 5, 9, 11 and 13 of the chip to pin 7 of the chip (Ground). This ties all unused pins.

MFJ 1270B steps:

5 Connect pin 5 of the 5-pin DIN from TNC A to pin 8 of the chip.

6 Connect pin 5 of the 5-pin DIN from TNC B to pin 6 of the chip.

7 Connect pin 2 of the chip to pin 5 of the chip.

8 Connect pin 4 of the chip to pin 9 of the chip.

Continued on next page

..KNOX from Page 10

node or the CROWD node. This isolation between the node stacks allows the TNCs on each matrix to have less crowding in their communications between each other. More importantly the wireline link concept allows very large node complexes to be built without regard to RS-232 electrical considerations. A TNC is designed to hook up to one computer. Hooking it up to five other computers (TNCs) through the matrix is wonderful for building networks but stretches the capabilities of the TNC's RS-232 port. Because Bob wanted to have four backbone links, a DxCluster port, a CROWD, a user port on two meters and an HF gateway, *plus* the BOB node he had to break up the node cluster into two separate nodes.

There is another advantage to having the wireline link between the TNCs: It makes a *real* nice light show!!

CROWD node

The first TNC on the left hand stack is the CROWD node. This TNC is plugged into the HexiPus™ matrix with four other TNCs but is not running TheNET software. Instead it's running NORD><LINK mini-conf software. It is fully TheNET compatible but instead of handling network traffic, the CROWD node's purpose is to allow stations who connect a round table conference capability. The name CROWD was coined by WA2WNI in 1988 and has since been widely used for this function. There are CROWD nodes at many sites in the north east. Each CROWD node has a different callsign and usually only one CROWD node will show at any node site. If you and a few friends want to have a conversation as a group you can all connect to CROWD at KNOX and each ham will see all of the text typed by each of the others. It's great fun and an excellent utility for emergency traffic handling.

Simply connect to the KNOX node, then connect to CROWD. Now type slash W "/w" and the CROWD will give you a list of the other stations connected in and will announce your presence on the CROWD. If there is nobody on, hang in there and hopefully somebody else will check in during the two hours before you time out. If you type anything you reset the timer for another two hours. If you check in regularly you'll eventually start something and before you know it you'll have a nightly CROWD crowd. Also check out the CROWD nodes at STMFRD and CANDGA nodes.

TaddBench

The work bench that the node is set up on is a bench designed by KA2DEW. Currently there are eleven of the benches in existence. KC4ZWI (Pete) and KA2DEW descended on Bob's house last April and with Bob's help (plus about $230 wood and screws) built the bench in Bob's garage in about 13 hours. It took another 30 minutes to disassemble and re-assemble in the den/radio room. Now Bob has about 85 square feet of bench to play packet on! *(Bob also runs a satellite television system business and a VHF/HF station on the bench)*

Connect over to KNOX and play around with the R and N commands. For novices at TheNET network hacking you'll find the diagram very helpful for learning how those commands work and how TheNET networks are put together. Have fun!

—Dana, WA2WNI; Tadd, KA2DEW; Bob, WB2QBQ; and Bob, NQ1C (took the pictures)

9 Connect pins 11 and 13 of the chip to pin 7 of the chip (Ground). This ties all unused pins.

Construction method.

I must warn you that I'm a software weeny, not a technician. That's why I do newsletter editing and not PC board design and radio modification!!

What I do for a simple quickie operation like this is run the wires from the B TNC into the back of the A TNC through the TTL interface hole. Fan the 14 legs of the chip out flat and glue the chip to the top of the Z80 CPU or the 32K RAM chip. Tie the wires coming into the TNC to one of the legs of the regulator IC as a strain relief. Now run the wires to the chip.

Modification for using MFJs instead of PacComm. The only difference between the two brands that we are concerned with is that the DCD level is inverted. So the MFJ required an extra inverter stage on the 74HC04.

Now turn it on and let the smoke out!

Back to Franklin.

The only difference between the MFJ and the Tiny 2 is the port speeds are set for 19200 in the Tiny 2 and 9600 in the MFJ. Because I do not use Tiny 2s I am not sure of any other mods for that TNC but remember to do the standard mods for the MFJ, I.E.: Clock, U3 etc.

73's and type at you later, and pray for peace in the world.

—Franklin Werren - N2JYG
sysop-Highland BBS in Sherman NY
(716) 761-6460
—editing and graphics by KA2DEW

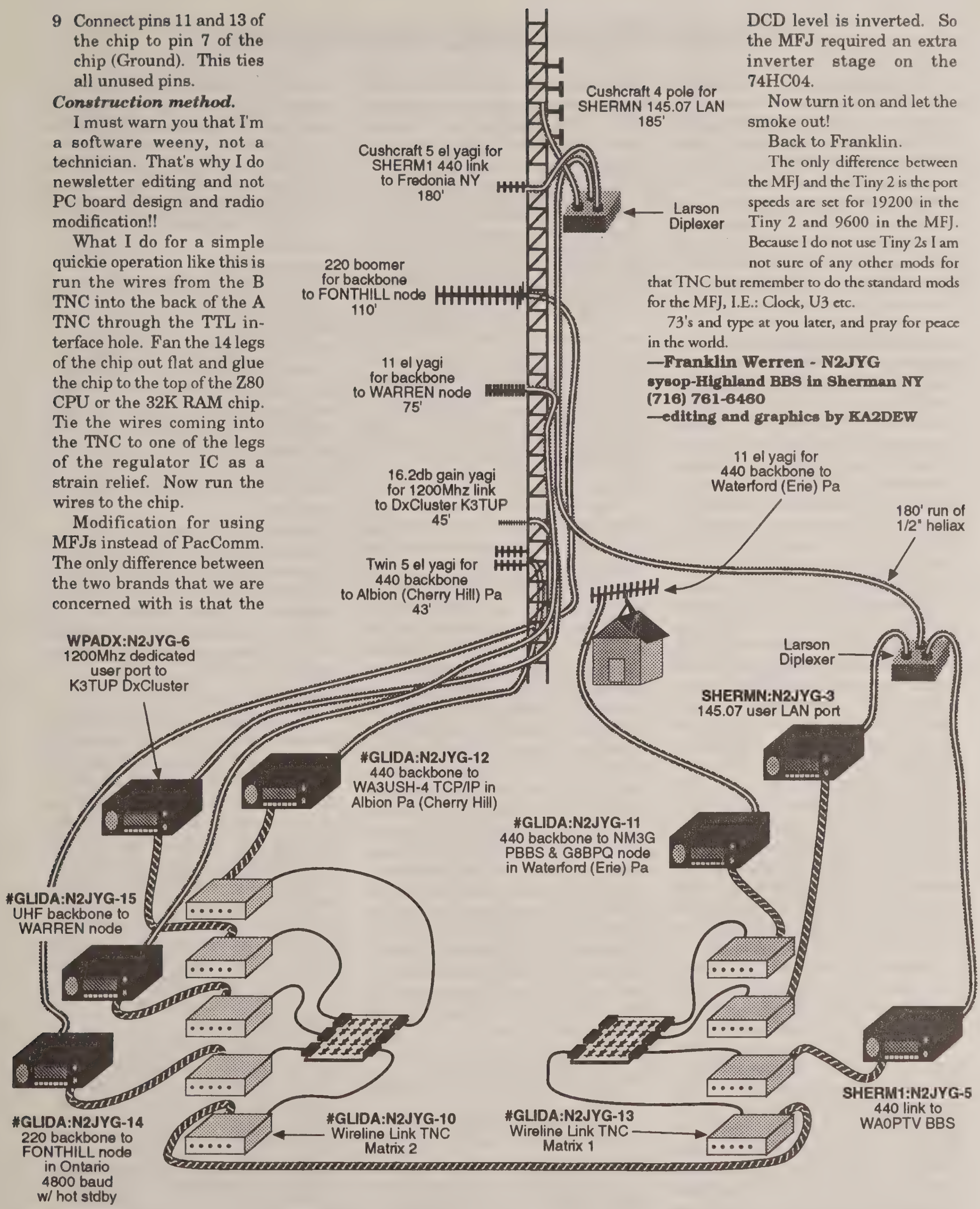

Cushcraft 4 pole for SHERMN 145.07 LAN 185'
Cushcraft 5 el yagi for SHERM1 440 link to Fredonia NY 180'
Larson Diplexer
220 boomer for backbone to FONTHILL node 110'
11 el yagi for backbone to WARREN node 75'
11 el yagi for 440 backbone to Waterford (Erie) Pa
16.2db gain yagi for 1200Mhz link to DxCluster K3TUP 45'
180' run of 1/2" heliax
Twin 5 el yagi for 440 backbone to Albion (Cherry Hill) Pa 43'
WPADX:N2JYG-6
1200Mhz dedicated user port to K3TUP DxCluster
Larson Diplexer
SHERMN:N2JYG-3
145.07 user LAN port
#GLIDA:N2JYG-12
440 backbone to WA3USH-4 TCP/IP in Albion Pa (Cherry Hill)
#GLIDA:N2JYG-11
440 backbone to NM3G PBBS & G8BPQ node in Waterford (Erie) Pa
#GLIDA:N2JYG-15
UHF backbone to WARREN node
SHERM1:N2JYG-5
440 link to WA0PTV BBS
#GLIDA:N2JYG-14
220 backbone to FONTHILL node in Ontario 4800 baud w/ hot stdby
#GLIDA:N2JYG-10
Wireline Link TNC Matrix 2
#GLIDA:N2JYG-13
Wireline Link TNC Matrix 1

Illustration of the Sherman NY node owned by Frank Warren, N2JYG

Gracilus PacketTen Network Node

Hi, I'm a nodeop of a Gracilus PacketTen based node here in the Chicago area. Yes, we are aware of NEDA. We've talked with various NEDA guys at the Dayton Packet Dinner, and know a little about how you do networks. We basically agree with the provisions you make to rid your network of what you call HTS stations, so that the network can perform reasonably. Our attempts to do that here have resulted mostly in Chicago style politics by people from outside the Chicago area, rather than an acceptance of the work that has to be done to make things work and a commitment to get on with it. Congratulations on your organizational success.

As you may know, K9NG is a local here. The local group in its early days recognized the need for development, and supported these efforts. The result was a 9600 baud network, using NET/ROM, a few months after NET/ROM was shipping. I developed modifications that matched the K9NG modem to Midland 13-509s, and we installed a 9600 baud NET/ROM at the K9VXW-1 site and downtown Chicago. The downtown Chicago site uses, and continues to use, one of K9NG's original prototype modems interfaced to the Hamtronics 220 Rx and Tx boards, that he used for the tests published in his paper along with the FM-5. It's been in continuous operation since 1987 at that site. Reports of G3RUH's early efforts to do 9600 baud, as reported in the British Packet Newsletter electronic edition, and circulated around the Midwest by N8XX, were actually transported thru the operational K9NG Modem based NET/ROM network in the Chicago area.

We came to the conclusions regarding dedicated link network structure, about the same time the *staggered link* idea was published in GATEWAY, by the Florida guys. Considering it further, and the practical limitations of Midwestern access to high performance RF sites, we did the system design for an idea which I've dubbed ***Cellnet***. It's relatively easy to do networking in mountainous areas, where there are good RF paths at people's summer cottages, with minimal tower and feedline. It's a little tougher in the Midwest where the 50 Kbuck tower only gets you 30 miles, reliably, and donated tower space is not always forth-coming for 3 or 4 antennas to be able to build networks like NEDA does. Cellnet solves these problems.

Cellnet

With a single dual band antenna, or an up/down mount 430 and 2 meter antenna, 3 links and a LAN station can be operated. The links will be full duplex, dedicated point to point, which is about 6 times better throughput than the HTS protected, simplex CSMA technique used in the NEDA network, and for about the same cost. The PacketTen was developed in response to the Cellnet concept, but its application has grown beyond that. See my paper in the 7th ARRL Computer Networking Conference notes.

Recent History

Anyway, based on that prehistory, here's what happened about the time we finished up the main 220/9600 baud stuff in the area: N4PCR moved to town. Additionally, KA9Q's code was first being tried and the fact that it could handle so many ports, and simultaneous links made me think that it was time to start getting the Cellnet ideas I had down on paper. At Dayton that year, to my surprise, Karn and Dr. Death did a dog and pony show about a system very similar to the Cellnet ideas I'd had. So that really got me motivated to write it up and finish the system calculations. The excitement was contagious and N4PCR started working on a controller that would work with NET. His first attempt was good but just as he got it to work the 68302 chip became available. The 68302 is what the PacketTen controller is based on. He dropped the old project and began a 68302 project, formed a company, got two other guys to help him with it, and just started *really* working hard on it all.

Configuration

The PacketTen system has 4 building blocks:

- 2 versions of the processor card;
- and 2 versions of the interface card.

Processor Card

There is a PC plug-in processor and another version that can stand alone or be plugged into the PC plug-in version. Each processor card has the 68302 on it which has three DMA ports, a 68000 CPU and a RISC co-processor for fast port operation, all in one chip. Additionally each PacketTen processor card has an SCC chip on it for two slower speed ports (up to 19.2Kbaud). The 68302 ports can do up to a megabaud. The maximum throughput per processor is around 2 Megabaud.

Interface Card

The original interface board is a straight RS-232 port board. The next interface board they did is one that can handle the Kantronics versions of the standard 1200 baud and G3RUH modems right on the board. I think they might be coming up with a RS-232 interface board built as a plug in, with the same mechanical layout as the Kantronics modem, so they can do away with the original interface board altogether.

PC based 10 port switch

As I said, above, the two versions of the processor board can be connected. This makes a 10 port switch. The two processors, in such a switch, and the resident PC communicate via triple ported memory, for full performance between the three.

Software

The PacketTen comes with NOS software, ported to the 68000 in EPROM. A stand-alone PacketTen is the only NOS-in-a-box system available today. There is an EEPROM for configuration memory. The KA9Q NOS has been expanded upon so that a NET/ROM-like user interface is there with full locked routes capabilities. The commands are different, being built into NOS, but the capability is there. I should know, I've been on his case to put them there, HI. The latest version of the code now has sorted NET/ROM nodes list too.

Defined Neighbors

By the way, we call locked routes *defined neighbors* in this part of the world so the NOS command that is used for that is the NET/ROM neighbor command. It is actually much easier to understand and communicate to others once you are up to speed with the Gracilus/NOS terminology.

Memory

The PacketTen has large memory for network node routing. It's much

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transmitting after the last packet that it passes is finished. Unless you are working a repeater this should be set to 0. Otherwise set it to a time just shorter than the repeater's *hang* time.

Cmdtime

In *transparent* mode this sets the 'command time-out'. This value is of no consequence in command or converse mode.

TxDELAY

This sets the amount of time that your TNC will generate garbage (no real data) before it starts sending the message that it has ready. During this 'garbage' time your transceiver must go from receive to transmit. The TxDELAY should also allow a small amount of time to open the squelch of the station you are talking to. TxDELAY should be set no more than 100ms longer than it takes your radio to go into transmit.

There are two ways to set your TxDELAY. If you have a second radio around with which you can monitor your transmit signal you can listen to yourself as you set the TxDELAY to a lower and lower value. First set it to 150. Now go into converse mode by typing *conv* at the **cmd:** prompt. Hit carriage returns while listening to the other radio. It's best to do this into a dummy load or on a rarely used 2m FM simplex channel. You can hear your packets go out and they should sound something like this:

brrrrrrrrrrrrrrrrrrrrrrrrrAP

Notice the long lead-in that is of constant tone. At the end of that is a short brap which is the actual data. Now set the TXDelay to 60. The lead-in is shorter.

Once you get familiar with what your lead-in (garbage) noise sounds like you can start reducing the TxDELAY until the lead-in *just* goes away. All that will be left is your data. See how short it is? Now increase the TxDELAY by 10 (100 milliseconds). That should do it.

The other way to adjust your TxDELAY is to set it to about 70 (700 milliseconds or 7/10ths of a second) and the connect to your local node or a friend's station.

Send a blank line. Watch for your STA light to go out. When it does reduce the TxDELAY to 65. Hit another blank line. Do this until you get disconnected. Now up your TxDELAY by about 12 points. If you didn't make any mistakes and if you had a good signal to the other station and if you wouldn't have gotten disconnected anyway due to channel activity you probably have the right value. Try it again at a different time of the day or with a different station on a different frequency. Do this often until you figure out what the right number is. Keep notes.

You should be able to set your TxDELAY to between 20 and 35 (200 to 350 milliseconds). If it is slower than that you might want to shop for a faster radio.

Paclen

This is set by experience. If you have a quiet channel and almost all of your packets get through the first time they are transmitted you can set this to a high value up to 229. If you rarely get a packet through you can set this to a low value around 40.

MAXframe

This is set in concert with Paclen. If you have any trouble at all getting packets through you should set this to 1. Only if the channel is quiet, with no competition, should you ever set this higher than 4.

PPersist

PPersist is an optional collision avoidance method. PERSIST and SLottime are the timers which are used to calibrate your PPersist.

What PPersist does is set the *niceness* of your station as compared to the other stations on the frequency. It was designed to be used in cooperation with ***all*** of the other stations on the frequency in a system where the number of stations that *could* be on the frequency at a time was predictable. Generally this isn't the case on most packet frequencies in most of the country (world!). There are perhaps 20 nodes/LANs in my experience that have any hope of making good use of PPersist and two of them are repeaters!

Example: If you set PPersist too *nice* you will be taken to the cleaners by those who are channel hostile. If you use PPersist to be equally as hostile then you are only increasing the bedlam.

If you choose to use PPERSIST, the math for figuring out how to set the values for a MFJ or PacComm is as follows:

PPERSIST = on

SLOTTIME = your TXDelay + Receiver delay (about 10).

PERSIST = 256/stations-1 where stations is the total number of stations that might be on the channel at a time. This sets your niceness. This also assumes that all of the other stations are using PPERSIST. If they aren't you will never get your packets through. If you aren't operating in a coordinated environment and you want to use PPERSIST I recommend a SLOT-TIME equal to 100milliseconds greater than your TXDelay, and a PERSIST of about 64 which equates to a channel with only five users at a time.

If you choose not to use PPERSIST then set PPERSIST = off. Then SLOTTIME and PERSIST don't matter.

Dwait

As I recall this was a timer used to allow digipeaters first chance at a frequency with an automatic Dwait of 0. Users that were minimal source of data on the channel would get the next higher value, around 4 or so and stations that were maximum sources of packets would get the higher values, around 16 or so. Generally nobody pays any attention to this and everybody sets this to zero. Setting Dwait to zero is bad practice and could be construed as malicious interference. Set it to around 4.

Frack

Frame Acknowledge timer. This is important. This tells your TNC how long it should wait before it retries. The retry delay is approximately equal to FRACK times the number of hops to the station you are connecting to.

Example: If you do a C MONROE to connect to the nearby node and then connect to STMFRD you are only going one hop because MONROE is doing the acknowledging. On the other hand if you do a C K1QSY v KA2DEW then you are going two hops.

So, if you expect that it will only take four seconds to get an answer to the guy you are connect directly to, then set FRACK to just greater than 4. You can experiment with this. If you set FRACK to 7 and things are real slow, set it to 4. If things get slower, set it back to 7. If you and your buddy are the only stations on frequency then you probably won't retry anyway but you can probably get away with FRACK = 1.

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NOS PARMS Table

This file roughly indicates the NOS equivilents of various TheNet PARMS. Please pay careful attention to the footnotes, some of them are important.

TN208		Description NOS
1	min quality for update	“netrom interface ax0 IPROCH 230” note 1]
2	HDLC channel quality	N/A (fits in with #1)
3	RS232 channel quality	N/A (fits in with #1)
4	obso count initial value	fixed at “5” [note 2]
5	min obsolescence for broadcast	node is broadcast until it drops off
6	nodes broadcast interval	“netrom nodetimer”
7	FRACK	not sure
8	MAXFRAME (layer 2)	“ax25 maxframe”
9	link-layer retries	“ax25 retries”
10	digipeat	“ax25 digipeat” [note 3]
11	validate callsigns	N/A
12	host mode connects	N/A
13	TxDELAY	“param ax0 1 15” [note 4]
14	broadcasts on/off	“netrom bcnodes ax0” turns on broadcasts for the interface named ax0
15	***pound*** node propagate	what does this mean?
16	connect command enabled	set through password file /ftpusers”
17	destination list max size	dynamically allocated
18	Time-to-Live initializer	“netrom ttl”
19	transport layer timeout	“netrom irtt” [note 5 - neato!]
20	transport layer retries	“netrom retry”
21	transport ack delay	“netrom acktime”
22	transport busy delay	“netrom choketime” (maybe? not sure)
23	netrom window size	“netrom window”
24	congestion control	(not sure)
25	non-activity timeout	n/a
26	P-persistence	“param ax0 2 128” [note 6]
27	slot time	“param ax0 3 xxx” xxx = slot ime
28	t2	(got to look this one up, book t work)
29	t3 timer	“ax25 t3 xxx” (zero means never”)
30	N/A	
31	N/A	
32	N/A	
33	duplex	“param ax0 5 xxx”

One thing that NOS has that TheNet doesn't have:
netrom verbose [ON | OFF]

if “off”, on a broadcast the switch will only broadcast itself; it will not repeat its nodes list, only advertise its presence.

Disclaimers

(1) I didn't do it.
(2) This list isn't totally complete, so if you have questions **ASK**
(3) **Watch out for units**. For example, PARM 21 (ACKTIME) is in seconds, but in NOS “netrom acktime” is in milliseconds. This can be a serious problem if you've got retry timer units out of whack. Look it up.
(4) If you've got sysop privileges, you can remotely sysop these parameters, with the exception of those that can only occur once on initialization (like setting the incoming route quality)

Notes:

(1) This can only be done once, in autoexec.net. In the example, it sets interface ax0 as the node mnemonic “IPROCH” with route quality 230.
(2) In NOS, the obsolesence counters are decremented on a totally different timer than the nodes broadcast timer. Since this number is fixed at 5, if you want it to drop a node after 2 hours you would set “netrom obsotimer” to 2 hours divided by five, or 1440 secs)
(3) You may never digipeat “through” level three
(4) ax0 is the name of the NET/ROM interface. The example is 150ms.
(5) This is a really neat feature of NOS. The initial round-trip-time (netrom irtt) is the “default” time in which you expect an ack back. After a few packets, NOS starts remembering what the *real* time is. Thus, after it has been running for a few hours, it will learn to expect a response from a close node in a much shorter time than a far away node. A fudge factor is added to this round-trip time internally. Because of this feature, setting the transport retry limit to 1 is not practical; I have been using 3 and think that is fair.
(6) ax0 is the name of the interface we're programming. The ‘2’ is the KISS parameter code for persistence.

—FRO/WZ2B
—NEDA technical committee - That IPROCH guy

Notes about the 9600 G3RUH modems

(including the NB96)

You may or may not have known that voltage variations on the 12V line affect the modulation level out of the NB96. This has caused some problems in some of the stuff I have done. A voltage change from 12 to 13.8V can easily change the transmit deviation (when fully interfaced to radio) from 3KHz to 5KHz. This is something to be aware of when setting up the 9600 BPS modems

I heard a report about a fix, which has made a big difference for some UoSAT ops, but with no cause. I looked into it, and I can see why. Here it goes:

On the NB96 card (internal or external) a reference voltage is derived off the 12V power supply by a resistor divider. This divider consists of two 100K with a .1uF capacitor from the junction of the resistors to ground. The resistors in question are RS1-3 and RS1-4. This provides a 6V reference. The capacitor and resistor values set a time constant of .005 seconds which filters out high frequency noise (above 200 Hz) which may be present on the 12V line. The 200 Hz significantly below the modulation rate so that is good, but it is too high to provide isolation from 60 or 120 cycle ripple from a poorly regulated power supply, and it provides no isolation from the low frequency voltage changes which occur when the transmitter keys up. I have noted that I have has to set TxDELAY much longer than I would have expected in some installations. This may be the root cause of that.

That resistor divider is buffered thru a op-amp follower to convert it to a low impedance suitable for use by the remainder of the circuitry. This is good or it would be much worse, but still any fluctuations in the reference on the high impedance side of the op-amp will be faithfully duplicated on the low impedance side. Since that reference is used by all the analog circuitry, and noise there degrades the overall system performance.

The fix to this problem is to replace RS1-3 with a 6.2V zener diode (anode goes to gnd). I would recommend replacing RS1-4 with a lower value resistor to increase the idling current of the zener minimizing voltage swings. Something between 1K and 5.1K should do nicely. Also adding a larger capacitor in parallel with C24 would be a good idea. A 5.0uF capacitor would maintain the same time constant if a 1K resistor were used instead of a 100K. 25uF would provide some immunity to 60 and 120 cycle stuff, but that starts getting big.. The Zener works well on the lower frequency stuff so the time constant between the resistors and capacitor is much less important so it is not worth getting too hung up on the capacitor. C24 should be left in the circuit as a .1uF. That provides isolation from the high frequency stuff which the Zener is not good on. RS1-3 and RS1-4 are parts of a resistor SIP network so it is not simple to just remove these without affecting the other resistors. Since the impedance of the reference circuit is being dropped so low with the above changes, these resistors can be left in place with little effect.

Note: the above note/modification not only applies to the PacComm units, but probably all the G3RUH based modems since the above problem is in his original design.

—Bill (NX2P)

Tiny 2 TNCs at 38.4Kbaud

I did some tests upping the clock speed on the Tiny-2 TNC. I successfully got them to work with a 9.825 MHz clock which is 2x the normal clock. Since the baud rate clocks are also derived off of the main system clock, the 19.2 position now generates 38.4Kbaud. As higher speed links are more common, and the number of these links at one site increasing, the normal capacity of the 9600 or 19.2K RS-232 link between the TNCs is becoming increasingly taxed. 38.4 may be a viable solution.

One of the driving factors behind the test is the poor high speed performance of the standard TNC code. Doubling the clock speed should go a long way to helping. Of course all the timing parameters are now only one half their original value.

A TNC modified as such does not have the same computing power of a "data engine" or PC, however using it for high speed packet does become viable. Can you call 38.4 high speed? Some people seem to thing 56K is a magic number. Sort of like 9600 is magic compared to 4800 although 4800 is quite respectable. Of course some people would say anything less than a 1 megabit is low speed. In my mind, 300-2400 is standard (slow) speed packet. 4800-19.2 medium speed, and I would call 38.4 to 1 Mbaud high speed. Above that can be very high. All is relative.

Here is an idea. The G3RUH modems can operate above 9600 by changing some of the filter components. In fact I am told they would work much higher including 38.4K. So now we have a TNC with a 2x clock, and set the radio baud rate to the 19.2 position so it is actually operating at 38.4K We modify the G3RUH modems filtering so it will do the 38.4K. So far so good, the proceeding is pretty straight forward. Next we take one of the Tekk KS-900 data radios. We change some of the front end filtering on the transmit side so it will pass higher frequencies than it was originally designed for. Now the only limiting factor is the 20KHz IF filter of the radio. We need more receive bandwidth. It is relatively easy on the transmit side, but we need to find a wider IF filter. Well I was thinking, what about FM broadcast receivers? They must use a wider IF and in fact, it should be about what we need. Perhaps a bit wide, but it should do it. What do you think? Basically a 38.4K link for the cost of a 9600 baud link plus a few extra parts and some work. Of course with the wider bandwidth range would be reduced. I am making some assumptions about the ability to modify the radio which is where I am not sure about. Any comments?

> *All the new Tiny-2s use 6MHz parts, but older units may use slower speed parts which means they could not be modified with the higher speed clock. In fact there is no guarantee that new units will work at the high speed. I only made the test on two units both of which worked fine. Also after upping the clock speed, tests should be made with the TNC at various temperatures to make sure it will function reliably.*

—Bill (NX2P)

[editor: Bill runs a four port ROSE switch site from his house in Sparta NJ. Bill is active in promoting packet in his area as well as running a custom PC board design business and being a PacComm dealer and a dad!]

Use of GE Phoenix VHF Radios for Node User Port Transceivers

Recently I have received a couple of GE Phoenix VHF transceivers that I considered for use at the CLV site. What a deal! A generous ham friend asked if they might be useful in our cluster. I saw an opportunity to reclaim a couple of expensive dual-banders and return them to normal use. These Kenwood stalwarts have given meritorious service for two years without a hitch. However, now was the time to replace them with rugged and durable radios.

The Phoenix is a 25 watt crystal controlled mobile unit whose small package lends itself well to stacking in tight quarters. It's tight front end and handy interface points make it a breeze to interface with TAPR clone TNCs.

A service manual was obtained and crystal data was determined. I ordered them from International Crystal Manufacturing Co. for about $38.00 a pair. Once inserted they tuned up on frequency without any trouble. The Phoenix seems to have a bottom frequency limit somewhere around 145.00 MHz. All coils were near the limits of their travel after tuning, however adjustments were positive with definite nulls and peaks where required. After about 1 hour tuning, the radio sprang to live with 23 watts output and a receiver sensitivity of about .35µV. Absolutely perfect for a rig used as user port with a low gain omni antenna.

I learned long that speaker audio is not necessarily the best for use with TNCs of the TAPR variety (or any other for that matter). I usually tap audio at the hot side of the receiver's volume control. This provides an easily found tap point and results in great audio with minimum distortion and filtering. Lo and behold, after studying the service manual I found an excellent audio tap right there on the Phoenix's rear interface connector. It is labeled 'FLTRD VOL/SQ HI'. As it turns out, this is audio after processing by a low pass filter that removes any CTCSS tones on the received signal. No problem for the TNC, as packet tones are not within this range. The filtered audio makes the job of the PLL much easier as it doesn't have to discriminated low frequencies and their resulting harmonics. An added bonus is that the volume control no longer has an effect on the desired packet tones and can be turned down so as to keep the site quiet and turned up when making antenna adjustments or to check the path.

The transmitter interfacing was straight forward. I simply connected the TNC transmit, audio and PTT lines to the radio's rear connector. Two audio inputs are available. I used the microphone input. I adjusted the TNC level and the radio's deviation control for 3Khz maximum deviation. This resulted in a sweet, easily decoded signal with no distortion.

The GE Phoenix appears to be an excellent radio for our purpose and could be for you too. They are easily found on the surplus market and require very little effort to retune for packet service. They are well built, durable and should provide many hours of dependable service.

—Charlie, N2CJ@WB1COY
—Node op, CLV/CLV440

Abbreviated DxCluster Command List

(Thanks to K6LLK)

Command	Description	Syntax
Announce	Make a general announcement to all nodes	A/F
	Make a general announcement to local node	A/L
Bye	Bye, disconnect from the PacketCluster	BYE
Conference	Enter network conference mode	CONFER
DELETE	Delete mail message	DE msg #
Didrectory	Show active mail messages	DI
	Show All active mail messages	DI/A
	Show mail to or from yourself	DI/O
Dx	Make a DX spotting info announcement	DX *freq call*
Show Dx	Show a Dx spotting announcement	SH/DX
Help or ?	Help (displays this listing)	H
	Display help for a particular command	HELP *command*
Read	Read a mail message	R *msg#*
Reply	Reply to the last-read mail message	REP *msg#*
Send	Send a private mail message	S *call* or S/P *call*
Set	Set user specific parameters	Example: SET/Name Tim
Show	Display various DxCluster Databases	SH/*commands*
Talk	Talk to a specific station	T *call*
Type	Display a particular file	Example: TY/BULLETIN CMND.TXT
Update	Update a database	UPD/Data
Upload	Upload a general file	UPD/File
	Upload a bulletin file	UPD/Bull
WWV	Make a WWV announcement	WWV SF=*xxx*, A=*xx*, K=*xx forcast*
	Show WWV announcements	SH/WWV

This material was copied from the Fall 1990 edition of the NCPA Downlink

Installation of the MFJ 2400 Baud Modem in the Tiny-2/Micropower-2 Series of TNCs

While performing this installation, normal anti-static procedures should be followed. Avoid carpets and plastic chairs (plastic chairs are really bad) as a start.

1 Remove the nylon standoffs from the modem so it will fit on the TNC.

2 The MFJ2400 has provisions for an on board negative voltage regulator. A 79C05 (-5V, 3 terminal voltage regulator in a TO-92 package) should be installed at VR1 and the trace between pins 2 and 3 of CN2 should be cut and a jumper should be installed between pins 1 and 2 of CN2. This now allows the MFJ2400 to be powered from -12V rather than -5V.

Steps 3 thru 14 will have to be performed to get the TNC and modem to fit into the case, however I recommend getting it to work first by skipping to step 15 and simply plugging the modem directly onto the TNC's modem disconnect header (MFJ2400-CN1 to TNC-J5). Pin one at CN1 on the modem should be aligned with pin one at J5 on the TNC.

3 Remove the Connector at CN1 on the MFJ2400. This is necessary since the shape of the PCB does not allow it to be plugged directly into the TNC and still fit in its case. Be careful not to break any traces. Clear out the holes so wires can be soldered in place later. To remove this connector, it may be easiest to break its plastic housing into small pieces with a wire cutter. The plastic housing usually can be pulled away from the PCB leaving only its contacts soldered in the PCB. These contacts can then be pulled out one at a time while applying heat where they are soldered.

4 Remove the connector at J5 on the TNC for the same reason as item #1 above. Clear out the holes so wires can be soldered in place later. To remove this connector, it may be easiest to apply heat to the solder side of the PCB at one of the pins. After the solder softens, pull lightly on the pin from the other side, it should pull out from the PCB and plastic. Repeat for all the pins.

For steps 5 thru 14, #24 gauge solid conductor wire is recommended. It is best to solder the wires in place on the modem first, with .75 inch of insulation from the bottom of the modem. Long stripped portions (2 or 3 inches) of the wire past the insulation will make insertion into the TNC easier.

5 Wire pad at MFJ2400 CN1 pin 6 to pad at TNC J5 pin 6.

6 Wire pad at MFJ2400 CN1 pin 11 to pad at TNC J5 pin 11.

7 Wire pad at MFJ2400 CN1 pin 12 to pad at TNC J5 pin 12.

8 Wire pad at MFJ2400 CN1 pin 13 to pad at TNC J5 pin 13.

9 Wire pad at MFJ2400 CN1 pin 14 to pad at TNC J5 pin 14.

10 Wire pad at MFJ2400 CN1 pin 15 to pad at TNC J5 pin 15.

11 Wire pad at MFJ2400 CN1 pin 16 to pad at TNC J5 pin 16.

12 Wire pad at MFJ2400 CN1 pin 17 to pad at TNC J5 pin 17.

13 Wire pad at MFJ2400 CN1 pin 18 to pad at TNC J5 pin 18.

14 Wire pad at MFJ2400 CN1 pin 20 to pad at TNC J5 pin 20.

15 Cut the trace between pins 11 and 12 of J5 on the TNC.

16 Cut the trace between pins 13 and 14 of J5 on the TNC.

17 Cut the trace between pins 17 and 18 of J5 on the TNC.

*The following traces should **not** have been cut on J5 of the TNC: Traces between pins: 1 and 2; 3 and 4; 5 and 6; 9 and 10; 19 and 20*

Using the supplied cable which plugs into CN7 on the MFJ2400 perform the following:

18 Cut one of the connectors off the supplied cable, strip and tin the ends of the unterminated leads.

19 Solder the Orange wire to the negative (-) side of C24 (CN7-3 Ground)

20 Solder the Yellow wire to the 5V output (pin 3) of U5 (CN7-4 +5)

21 Solder the Green wire to the side of R6 which is connected to U15. (CN7-5 -voltage)

22 Solder the Red wire to pin 4 on the radio connector.(CN7-2 RX Audio)

23 Remove C27 from the TNC and solder the Brown wire to the C27 pad which is connected to R12. (CN7-1 TX Audio)

24 Connect a wire from R37 where it connects to T5 on the MFJ2400 (the end closest to IC6) to Ground (Modem enable wire). Grounding this wire enables the 2400 baud modem.

25 The Radio baud rate setting on the Tiny/Micropower should be set to the 2400 baud position

26 Place some insulating material between the Modem and the TNC to prevent shorts. (note - anti-static foam is not an insulator. I have seen people use it as such which causes some real interesting problems)

27 Clip approx 1/8 inch off the ends on the pins at CN6 on the modem. They are a little long and will short to the case unless cut.

28 T3 should be bent over so its tab does not short to the case.

29 To hold the modem in place, a couple of pieces of buss wire can be wired from the ground plane on the component side of the modem along the edges (scrape away the solder mask) to the ground traces along the edges of the Tiny/Micropower.

This completes the installation.

NOTES:

To restore 1200 baud operation, first the Modem enable wire connected to R37 on the MFJ2400 should be disconnected from ground and be left to float (Item 24). Second C27 needs to be reinstalled (Item 23), but the Brown wire need not be disconnected since the

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then set the node to block communications to BBSs that do not follow this policy. N2CJ will try to work with BBSs who are unable to come up with 441.1 gear by Sept. 30th in an attempt to make a smooth transition. Something which will help improve network access for users is the addition of the ULSTER node. This is really good news as the area has been bottlenecked before now. Kevin brings up that the 441.1 port will be a BBS access port which will not be hidden transmitter free. Kevin suggested that the technical committee adopt the term *server port* when referring to a non-2meter port designated for communications with servers. The term *dedicated server port* could be used to refer to a port which only works one server, i.e. with a point to point link. Tadd mentioned that he has come up with a tentative definition for the word *server* which he'd like to talk about. Cal suggested that we hold that for later.

Dana and Rich discussed the ALBANY to KNOX link that uses the PacComm G3RUH modems with MDS of Rochester 900MHz radios.

Dana also announced that the CHERRY node now has a user port on 147.480MHz. It is a low power LAN intended for user access to the network and network services only. No servers will access the network via that port.

Kevin reported that he and Don are still working on Binghamton nodes to talk to LWR in Pa. Dana asked if Kevin has talked to NX9O and is given an affirmative.

Kevin said that they are trying to organize local meetings in Wilkes-Barre and in his own area near Cortland.

Bob, NQ1C, mentioned that he and Jim, K1MEA are plotting a new backbone circuit in the Springfield area to add more throughput than is currently offered by the BERK 1200 baud 440 repeater. He said that the repeater is unable to keep up with the needs of 4 2m user port, one 220 gateway and two BBSs. The new backbone would link CHSTR, or something else to the west, with the two BBSs, the SPFLD user port and the SPFLD2 gateway port. This might take several links. Jim and he are discussing how to do this currently.

Cal reported that the Littleton to VNH project is not up yet but is in project.

Map Committee Report

Cal said that he is exchanging maps with the board members.

A brief discussion about what Cal currently has for map info takes place.

HexiPus™ Project Committee

Howie, who is not present, had previously reported to Cal that he had shipped 15 so far. Tadd reported that he and Dana sold about 15 of the consignment that Dana and he had. Tadd had sent all of the money that he and Dana collected for HexiPus™ board at Dayton, Rochester and Mt. Beacon hamfests to Herb, in check form and does not have any absolute numbers. Tadd brings up that the treasurers report doesn't break down how many HexiPus™ boards were sold. Cal said that this is a problem that will be brought up later.

TCP testing

Bob, NQ1C reported that IPWMA, WZ2B and N2GFN are talking together. He said that the links work fine and that he's noticed that the speed is dependent on network loading. He thought that a lot of that has to do with congestion on the BERK repeater. He's been trying to spread the

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PacketTen from page 14

larger than the 32K of RAM that NET/ROM can use on a TNC2.

TCP/IP

Since the PacketTen is running NOS, TCP/IP goes right through it. There's no need for NET/ROM-to-IP gateway stations if two IP LANs are connected together through links made up of PacketTen stations. IP is truly the future for high performance packet. It will eventually have the capability of automatic routing through hierarchal and determined routes. This combined system is powerful enough that world wide real time routing would be possible since beyond the 'determined' routing horizon packets would be switched by hierarchies kind of like switching real time traffic like BBSs.

Now...for *non* real-time traffic. (zzzz)

—Don, WB9MJN@W9IUP

> *Full info can be gotten on*
> *the PacketTen from:*
> *Gracilus*
> *623 Palace St.*
> *Aurora, IL 60506*

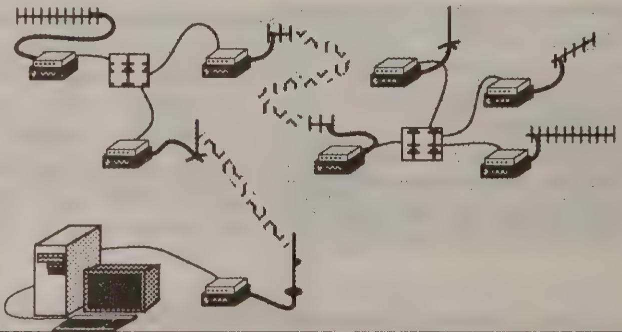
2400 baud from page 19

2400 modem goes to a high impedance output. Finally switch the radio baud rate setting back to 2400 baud. Proper wiring of a 3PDT switch to perform the above would allow switch selecting 1200 or 2400 baud operation.

For proper 2400 baud operation thru the radios microphone jack proper setting of the transmit deviation is necessary. 3.5 kHz is recommended. The transmit audio level can be adjusted by using the R12 on the TNC and if the output range is not sufficient or touchy the jumper can be moved on CN6 of the MFJ2400 or change the adjustment range (see MFJ2400 baud manual) The potentiometer on the MFJ2400 can also be used to adjust the transmit audio level as well.

The TNC which originally would function with input voltages from 9 to 14 volts will now only work with 11 to 14 volts input. This is because the negative voltage picked off of U15 on the TNC will not be enough for the -5V regulator on the modem. When this happens the modem stops functioning although the TNC will still function normally over the RS-232 port.

—Bill Slack, NX2P
—Sparta ROSE switch op (201729)



Glossary of Packet Networking Terms

This is a document that I originally created for the regional development meeting in Scranton last April. It will be included in the new Annual membership package but for those who have already gotten there packages this year I've included it here. Any comments, corrections or additions to this should be sent to me (KA2DEW) via one of the methods listed in the editors column so that I can include them in the Annual. Thanks.

Autoforward

Many of the bulletin board and mail server programs (BBS) are capable of passing messages to each other. The process of a bulletin board recognizing that it has mail to go to another bulletin board, connecting to another board and then sending the traffic is called Autoforwarding. (see also Forward File) This allows packet users to send mail in a non real time fashion anywhere on the planet where compatible BBSs exist.

Autorouting

This is a process by which a network node can pass traffic to another node via one or more intermediate nodes.

Backbone

A backbone is a system of links where nodes may communicate without interfering with or being interfered with by local access, and where data may be passed in a fashion and with hardware that is optimized for passing data, rather than optimized for inexpensive user stations.

Example:

- Most user stations operate at 1200 baud on two meters. A backbone would be more efficient and less susceptible to interference if it were on UHF or 220. Also a backbone might be optimized by taking advantage of the knowledge of all radios on each link. Such optimization might included setting acknowledge delay (RESPTIME), Transmit lead time (TXDELAY) or persistence (PPERSIST) to values that work best for the radios on the backbone frequency. Such settings might be impossible if any average user stations were to be able to access the link radios. In addition baud rates might be increased if only a few radios/TNCs need be affected.

Backoff

When a packet is sent and not responded to the sending station will wait a specified 'backoff' before retrying. In simpler systems this is called "FRACK" or FRame ACKnowledge delay. In more complex systems, like TCP/IP, the backoff time can be calculated based on previous performance of the link. One such backoff procedure is called 'exponential backup'. In this system the amount of time delayed between resending a missed packet increases by a stable factor each time the packet is tried, until some maximum backoff time is reached. (See TCP/IP, FRACK, Retry)

Breakout Node

This is a node that is capable of handling many links. In many cases packet nodes have been installed in places where many radios or backbone links are not allowed, such as on high mountains of great commercial value. A breakout node holds no special meaning except that it is a node that has proven to be very expandable and at which the node owner sees little or no limitations on reconfiguration.

Choke/Unchoke

When a computer is unable to process data as fast as another computer is sending it the receiving computer may instruct the sending computer to stop sending the data. This condition is often refered to in the packet world as 'choke'. 'Unchoke' refers to the re-enabling of the sending computer.

Example:

- A TNC running TheNET is capable of storing a fixed number of packet frames in memory. If this number gets exceeded data might be lost. Because each TheNET node is capable of supporting many users and some other network management functions simultaneously the memory is partitioned to smaller blocks called buffers. Each user on the node is allowed four buffers (in the NEDA network). When those four buffers are used up the TheNET TNC attempts to choke the user. If the TheNET TNC is at the far end of a network circuit the choking and unchoking process takes somewhat longer. What actually happens is that when a message is passed across the network to the destination user port that destination user port may respond with a 'choke' message. The destination user port will attempt to deliver the data that is has and when it is ready will send an unchoke message back to the originating user port. Based on a time-out timer the originating user port might resend it's delayed packet even though it has not received the unchoke message.

Circuit

In a TheNET network a circuit is an assigned connection between two nodes. Each of the two nodes has information to the effect that the circuit exists. The two nodes also have a routing table from which the first element on the path to the other node may be realized but the two nodes do not know all of the intervening nodes. The circuit exists until the destination user or server or the originating user or server disconnects, or until one of the two nodes decides that data cannot be sent any more (due to L3 retry time-out or unchoke failure) or if no data is passed across the circuit during the time set by the no activity time-out. In the NEDA network the L3 retry time-out is 5 minutes times 2 retries and the no activity time-out is two hours. (see link, neighbor node, choke)

Collision

This is an event where a receiving station doesn't receive it's desired packet because another packet was generated by a different packet station in the same time frame as the desired packet and interference occurs. In this case the sending station will wait a backoff time (see backoff) and the packet is retried or a special poll packet is generated. (See poll-packet, retry, backoff and frack)

CROWD

This is the name given by the NEDA founders for a piece of software written by NORD><LINK to run in a TheNET network. Most NORD><LINK documentation refers to this is a mini-conf (conference) node. The CROWD software is installed at a TNC. Access is over the network only, through the serial port in the CROWD TNC from other TNCs at the same node site. There are several CROWD nodes in the NEDA network and several more in other networks.

CSMA

Carrier Sense, Multiple Access: This is a system of packet operation that requires that all stations wait for the channel to be quite before transmitting. Most amateur radio packet uses CSMA.

Dedicated port

This is a port designated for a specific purpose with only one other station on the frequency, usually a tie-in to a server or other network hardware.

Diode Matrix

The TNCs running ROSE or TheNET network software can communicate to each other over their RS232 ports. If two TNCs are used at a node site the connections are simple connector to connector wire connections. If more than two TNCs are used a diode matrix is required. (See Hexipus)

Dynamic Rerouting

In a network where redundancy exists in the backbones from one city to another some types of network software allow for the network to recover automatically from a backbone hardware failure by rerouting traffic through the redundant link. This is called 'dynamic rerouting' as it can adjust dynamically to a changing network. (See Backfeeding, ROSE, TCP/IP)

ERS

Exposed Receiver Syndrome: This is a condition where a packet station, be it node or user, is unable to transmit due to the fact that it perceives the channel as being active continuously. This can be caused by Hidden Transmitter Syndrome and is often the case when a node is located on a high hill with surrounding metro areas. (See HTS, CSMA) Also see an article in this Quarterly called *Exposed Receiver Syndrome.*

False Route

In a network using TheNET software the node routing is generated automatically by the nodes themselves. If improperly managed it is quite possible for routing to be discovered and used by the nodes such that Dx paths are treated as real paths. In this case a route may be created in the routing table that depends on a 'lift' (propagation enhancement) condition. When the lift goes away the nodes will be helplessly trying the 'false route'. This condition is preventable in a TheNET system by manually controlling the route tables to specify valid routes to neighbor nodes. This situation cannot occur with ROSE or TCP/IP software as all neighbor nodes and routing information is created either manually or by software that is much more intelligent than TheNET. (See TheNET, Locked Route, ROSE, TCP/IP, Neighbor).

Forward File

This is the disk file on a packet bulletin board system (PBBS) that is responsible for directing the autoforwarding operation. By making entries in this file the PBBS system may select what packet paths are used to each PBBS that is forwarded to, when each operation is performed and what traffic is sent during each piece of the forwarding operation. (See AutoForward)

FRACK

FRame ACKnowledge delay: This is the time after a packet is transmitted by a TNC before the TNC decides that a frame acknowledge is not going to occur. At that point the TNC performs backoff and then a retry. (See Backoff and Retry).

G8BPQ Code

John Wiseman, G8BPQ, developed a TSR (terminate stay resident) program for the IBM PC and compatibles that would imitate TheNET and allow node access for a program that runs on the PC. This program simulates the TheNET node functionality and allows routing from a TheNET system directly to the PBBS or other program running on the PC. Unlike a TheNET node which can only handle one radio per TNC, the G8BPQ program may direct traffic in and out of several radios by using KISS TNCs or other TNC/modem cards. (See KISS, Dedicated port, Locked node)

Gateway

A configuration of nodes where connectability is available by deliberate manipulation but where automatic end-to-end routing is not possible. This is useful for connecting two networks together such that users and servers on one network can access users and servers on the other network without compromising networking practices on either network.

Examples:

- To access packet radio from Fred's telephone packet gateway I can phone up and use a password. After Fred's machine accepts the password I can use my callsign on Fred's PC.
- To gateway into TCP/IP in Rochester from Albany I can use the TheNET network by connecting into IPROCH which is a PC running NOS. Once I get connected I can use the TELNET program to access another TCPer. IPROCH:WZ2B is a gateway.

Hexipus

Six way diode matrix card: This is a product of the North East Digital Association (developed by WB2JLR) that allows up to six TNCs to communicate via RS232. This is used in TheNET and ROSE multiport nodes such that up to 6 radios may be installed at a single network node site. More than six radios/TNCs may be used by adding more than one Hexipus and by using a wireline link based on a TNC at each Hexipus. (See Wireline link, Diode Matrix)

HTS

Hidden Transmitter Syndrome: This describes a condition where throughput is drastically reduced to well below the specified baud rate because a single station is able to hear two or more stations that can't hear each other. (See throughput)

HTS free or HTF

By making sure that every radio/TNC on a frequency can hear every other radio/TNC most of the collision problems and inherent loss of throughput may be removed. At this point backoff becomes effective and the performance of the system of radio/TNCs may be predicted more accurately. The only remaining problems occur when radio dead time due to slow transmit receive switching is excessive. Also backoff must be used if there are more than two radio/TNC sets on frequency. (see backoff)

KISS

Keep It Simple Stupid: In the packet world this usually refers to a program or mode that relates to TNCs in which the functionality of a TNC is entirely remote controlled by an external PC or other host. KISS mode is used by G8BPQ code and TCP/IP.

LAN

Local Area Network: NEDA defines a LAN as a user access node and a group of users. Servers do not communicate with the network on the LAN frequency but use dedicated access frequencies. LAN users which are home stations running minimum antenna and power configurations to access the node may access multiple servers through the network via the local access node.

Example:

- A sample network node setup would include a user port that can hear twenty or less active packeteers. No other user ports and no servers share the frequency within the range of the user port radio. The node setup must included one ore more backbone links to other nodes. If any servers exist in the area that need network access then dedicated link radios and TNCs are added to the node stack. Users may access those servers (if any user services are supplied) from the LAN frequency by using TheNET, ROSE or other networking technology.

Locked Node

TheNET nodes have the capacity to generate routing lists automatically based on parameters set in the node's RAM. The parameters specify default quality values to be assigned to routes to each neighbor, separately defined for radio port neighbors and RS232 port neighbors. If a neighbor tells me (I'm a node now) about a certain node, by callsign and node name and quality, I'll remember it for a duration that is also setable by the parameters in RAM. If that duration ends and I haven't gotten a refresh on that information, I'll forget about the node. A locked node is where an individual node is given a specific quality and nearest neighbor route, but for which the duration is set to infinite. This locked node must be manually entered by a sysop but is visible to anybody who wants to look for it by doing a N NODENAME for any nodes that are suspected as being locked.

Example:

- In the NEDA network the default qualities for a user port are 230 for over the RS232 and 50 for over the radio. The minimum quality to broadcast is also set to 50. In this case any station heard over the user port is listed at the user port but is not delivered over the backbone to other user ports. In the case of a UHF or 220Mhz user port there might be servers that are TheNET compatible that should be shown at other user ports in the region. Rather than set the defaults so that all nodes seen over the radio from a specific user port would be broadcast it is possible to 'lock in' a specific node at a higher value. This is routinely done for G8BPQ BBSs in the NEDA network.
- Another NEDA example: if a node performs a special function at a node site or in a certain region it may be locked at a low value so that it doesn't propagate any further than necessary.

This is the case with CROWD nodes, DxCluster access ports and BBS/G8BPQ nodes. Each of these special purpose nodes must be visible at all node sites within the designated geographic areas but need not be spread to other areas.

Locked Route

TheNET nodes have the capacity to generate routing lists automatically based on parameters set in the node's RAM. The parameters specify default quality values to be assigned to routes to each neighbor, separately defined for radio port neighbors and RS232 port neighbors. If I (I'm a node now) hear a nodes broadcast from a new neighbor, I'll add a route to my routes table according to the default quality value in the parameters table in RAM. So long as I keep hearing nodes broadcasts from the neighbor I'll keep the route listed. However, if I hear a node that is not reliable I might decided that the unreliable node is the prefered route to certain destinations. This is called a false route. One possible solution is to lock the route to the unreliable node to 0. Another solution is to lock the desired routes to the required value and then set the default to 0. Or perhaps the unreliable routes or the parameter default could be set to a value that is not 0 but that is such that the false route won't get used by accident.

Matrix

Matrix = Diode Matrix: The TNCs running ROSE or TheNET network software can communicate to each other over their RS232 ports. If two TNCs are used at a node site the connections are simple connector to connector wire connections. If more than two TNCs are used a diode matrix is required. (See *Hexipus*)

Matrix Monitor

Communications between TheNET TNCs via the RS232 port or over a matrix is not in a textual format that is readable by a dumb terminal or protocol analyzer. A Matrix Monitor is a hardware or software device that can display the data passing across the matrix in a form that is legible and informative. G8BPQ code includes a program that can observe TheNET communications over the matrix. KA2DEW developed a crude single board computer with this capability also but the product was never made reproducible. (anybody want a good project?)

Multistreaming

This is the process by which a user can connects to several stations at once. (See *Stream*)

NBBSC

NEDA BBS Committee: This is a group that converses on issues dealing with server communications and access across the NEDA network. All persons in this committee are NEDA members and are volunteers. The chairman of the committee is appointed by the NEDA Board of Directors. Among other regular projects that NBBSC does is the generation of the server list in the NEDA Quarterly. To contact the NBBSC send a packet message to NEDA @ W1NY with attn: NBBSC in the title field.

NBOD

NEDA Board Of Directors: This is an elected body of 6 NEDA voting members that is the head of the North East Digital Association. The board members are elected for 2 years terms, 3 elected each year, and serve the club. To contact the board of directors you should send a packet to NEDA @ W1NY with attn: NBOD in the title field.

NEDA

The North East Digital Association. This is a club that was formed in the fall of 1989 to support and instigate packet network development. The contact address is Box 563 Manchester NH 03105 or via packet is NEDA @ W1NY.

Neighbor

In a network of nodes the neighbor of a node is any node that is talked to directly.

Example:

- If the linked system consists of FRED <-> BOB <-> ED <-> LEFT <-> RIGHT then the neighbors of ED are BOB and LEFT

NESAC

NEDA Emergency Services Advisory Committee: This is a group that is responsible for interfacing between NEDA and the various state, federal and local agencies (including ARES and RACES) that would be able to make use of the NEDA network for tests or during actual emergencies. To contact NESAC send a packet to NEDA @ W1NY with attn: NESAC in the title field, or send a letter to the club POBOX.

Node

A node is an active element in a network. This can mean anything from a user station to a bulletin board. Traditionally a node in packet radio is an intelligent router of real time data, somewhat more intelligent than a digipeater but faster than a store and forward BBS.

NRS

Network Regional Sysop: During the third through sixth quarters after NEDA was formed the NRS was a network conformity tool. The NRS would keep track of all of the nodes in his/her area and make sure that parameters were followed. This was the solution that the board of directors had chosen to network configuration and administration. In the Summer of '91 this method was under fire and although as of this writing (Sept 91) the NRSs still exist it is understood that the Standards and Practices document and some subtle changes in policy will lead to the NRS structure's being disbanded in the next Quarter or two.

NTECH

NEDA Technical Committee: This is a group that is responsible for maintaining the NEDA network software and for making recommendations to the board of directors for changes in club and network policy in regards to network technology. The chairman of the technical committee is appointed by the board of directors. The remainder are volunteers. The only restriction on membership are that all members must have direct connect access to the NEDA network at least some of the time and must be approved by the chairman of the technical committee.

Octopus

This is a product of John Painter (rights now owned by NEDA) that was an 8 port diode matrix card to couple TNC2 compatible TNCs to make a multiport node. This product has been outdated by the Hexipus. (See Hexipus, Diode matrix)

Path

This word is used to mean the nodes, digis and servers that must be used to pass data from one point to another. Sometimes the path may be specified without including some intermediate nodes if the knowledge of those nodes is not necessary to pass the data or make a connection.

Poll Packet

In the latest version of AX25 packet protocol if a transmitted information packet is not acknowledged the transmitting TNC will generate a poll packet to see if the destination TNC is still around. If the poll packet is acknowledged then the transmitting TNC will once again attempt to send the information packet. Note that if there is a periodic noise at the receive TNC that the poll packets might be received but that a particularly long information packet might never get through. In that case the retry process might take place until manual intervention occurs. (see retry)

Port

TNCs are two port devices, RS232 and radio. With network software, like ROSE or TheNET, they can communicate with other network nodes via either port. If a stack of TNCs is networked using a diode matrix then what is refered to as the ports are usually the radio port of each TNC. Thus a 3 radio node is refered to as a 3 port node.

Protected Backbone

A protected backbone is a backbone where none of the known devices involved in the backbone will accept traffic from any unknown device. (see Backbone)

Redundancy Path

In a mature packet network more than one path would exist between every two points. If one of the two paths is prefered due to load handling capability or number of node hops then that path would be called the primary path. The other path would be called the redundancy path. (see Path)

Response Time

This is the time between sending data to a remote device before an expected response returns to the originating station.

RETRY

This is a process by which a packet that is not acknowledged is regenerated.

ROSE

RATS Open System Environment: This is a networking software package created by Tom Moulton, W2VY, in concert with the Radio Amateur Telecommunications Society in New Jersey which implements a multiport, multistation packet radio network. The software consists of several parts. The most major part is in the form of an EPROM that resides in a TNC2 compatible TNC. Other parts include network management and system operation tools that run on a PC compatible but which are not integral to the network's day to day operation.

ROSE operation is done with the use of site callsigns and numeric designations that are traditionally in the form of a telephone area code and local code. The user treats the local ROSE 'switch' as a digipeater with the destination switch's numeric code as a second digipeater in the user connect sequence.

Example:

- To connect from WB2DWD's station in Long Valley NJ to KA2DEW's station in Potsdam NY (we wish such a system existed!!) a user would do:
  C KA2DEW v NX2P-3,315268
  where KA2DEW is the destination user's callsign, NX2P-3 is the user's local switch, and 315268 is the designation for the switch in KA2DEW's area and on the frequency that KA2DEW will be operating. Note that KA2DEW will get a connect message that looks like:
  *** Connected to WB2DWD via K2CC-3,201876
  where WB2DWD is the originating station, K2CC-3 is KA2DEW's local switch and 201876 is the numeric designation for WB2DWD's local switch. 201876 is the same switch as NX2P-3 and 315268 is the same switch as K2CC-3

The linking methodology between ROSE switches is very open to the design requirements of the implementation. ROSE switches may be linked with a common trunk frequency, with hidden transmitter free backbones, or on the user access frequencies. ROSE switches may be built with from one to many TNCs on many frequencies.

The routing methodology used in ROSE is based on a fixed table stored in RAM in each switch and downloaded by the designated sysop. This may be done locally or from the far end of the network. The routing may list individual switches and include the neighbor for each individual switch or the switches may be listed by class allowing whole 'area codes' to be listed with the same neighbor node. Alternate routes may also be specified. If a link fails completely or is taken off the air the system would adapt quickly.

This software has been in Beta test station for several years and as of August of 90 has been used successfully for building multiport nodes. Tom, W2VY, is still working on adding new features and implementing changes to take advantage of new hardware.

A notable difference between ROSE and TheNET is that with ROSE a user doesn't have to know about any intervening hardware between his entry and exit ports in the network. On the other hand the user is also unable to *find out* anything about the intervening hardware.

Route Stepping

One of the features of TheNET is that an individual may hunt through a TheNET networking and take advantage of local Routes commands to determine what all of the neighbors of a particular node are. With this knowledge the user may then connect to a neighbor node and repeat the process. In this way an individual user may entirely map the existing network or collection of networks. This has been taken as a disadvantage by some network developers due to the vast amount of network traffic that is generated by this user-play process.

One advantage of route stepping is that if there is a site that is accessible from one end of a network but that is not known on the other side of the TheNET network the user may simply connect from his/her origin user port to a node that knows of the desired site and then connect to that desired site. This may be done repetitively to get to a very distant node.

Another advantage of route stepping is that there are timers internal t o the TheNET node that specify how long a packet may take to get from one end of the network to the other. If the packet takes longer than specified by the timers then network-end-to-end retries are performed. This results in unnecessary network load. Furthermore if the retries ever fail then the user is disconnected. By making smaller steps the user may create a more robust path. (See TheNET)

Server

A server is any stations that is operating as a service to other users than the owner. This may included BBSs, DxClusters, DOSGates, TheNET nodes, ROSE nodes, TCP/IP hosts etc. etc.

Site Hardening

Term for ruggedizing a site by adding backup power, shielding or lightning protection. This includes weather protection and protection against RF problems or nuclear attack.

Site Manager

This is the person or persons that are responsible for node hardware and site access.

Site Sponsor

This is the person or persons who are financially involved in acquiring and maintaining node hardware.

Site Sysop

This is the person or persons who have software control over a node site.

Stream

AX.25 allows many connections to be made from one station at the same time. Each connection is called a stream. The origin and address callsign pair for the connections must be different for each stream. That is: If I am KA2EIA and I connect to three other stations, I can connect to NK1M, K1MEA and NQ1C but I cannot connect to NQ1C, NQ1C and K1MEA. This process is called multistreaming and is available on most modern TNCs. Look at the *USERS* command in your TNC's manual.

TCP/IP

Transmission Control Protocol/Internet Protocol. This is a suite of protocols that define the operation over the 'Internet'. This package of protocols was used by Phil Karn, KA9Q, for the creation of a packet radio version of TCP/IP. As this is a fairly mature networking system it supports many features not available in the current 'made for ham radio' protocols. It also has features that would take much better advantage of networking resources for the transmission of volume data than do TheNET and ROSE. One problem that TCP/IP for ham radio currently has, however, is that it requires a more sophisticated computer and a more sophisticated operator than are required to operate ROSE and TheNET. Articles on this subject appeared in the Spring '91 edition of the Quarterly.

TheNET

This is a networking software package created by Hans Giess, DF2AU, in concert with NORD><LINK in Germany which implements a multiport, multistation packet radio network. The software consists of several parts. The most major part is in the form of an EPROM that resides in a TNC2 compatible TNC. Other parts include node configuration tools that run on a PC compatible but which are not required after initial system setup.

TheNET operation is done with the use of site callsigns and mnemonic designations that are traditionally in the form of a city name. The user treats the local TheNET node as a remote command processor by first connecting to it, then away from it.

Example:

- To connect from WB2DWD's station in Long Valley NJ to KA2DEW's station in Potsdam NY (we wish such a system existed!!) a user would do:

  C SUSSEX, then when connected,
  C POTSDM, then when connected,
  C KA2DEW where KA2DEW is the destination user's callsign, SUSSEX is the user's local switch, and POTSDM is the designation for the switch in KA2DEW's area and on the frequency that KA2DEW will be operating.

  Note that KA2DEW will get a connect message that looks like:
  *** Connected to WB2DWD-15
  where WB2DWD-0 is the originating station

The linking methodology between TheNET nodes is very open to the design requirements of the implementation. TheNET switches may be linked with a common trunk frequency, with hidden transmitter free backbones, or on the user access frequencies. TheNET switches may be built with from one to many TNCs on many frequencies.

The routing methodology used in TheNET is based on a dynamic table stored in RAM in each switch and automatically generated by periodic information transfers between nodes and within restrictions placed on each TNC by the designated sysop. This may be done locally or from the far end of the network. The routing lists individual nodes and includes the neighbor for each individual node. Alternate routes are automatically generated but in practice are not used. If a link fails completely or is taken off the air the system will adapt to the lack of that link after a number of hours.

TheNET has been in use now for several years in the US. Recently NJ7P, Bill Beech in Arizona has been releasing heavily modified versions of TheNET under the name of TheNET Plus.

A notable difference between TheNET and ROSE is that with TheNET a user can delve into the routing tables of each of the nodes and find out how the network is put together. The user can also determine from available information at each node TNC how well the node is managed and how well it is integrated into the surrounding network equipment. On the other hand the user is *required* to know at least some information about the network's architecture, at the minimum, and in some areas the user needs to have a very complete knowledge of the architecture in order to use the TheNET nodes effectively.

TheNET PARMS

TheNET nodes, which run in TNCs, operate using timers and other parameters that are initialized in the EPROM when it is burned. Some of these timers and parameters may be modified over the air by the site sysop. A complete description of these parms was published in the NEDA Quarterly volume 2 number 2. This info will be reprinted in the 1992 membership package. (See TheNET, NTECH)

Three Way Wireline Link

This is a circuit that allows up to 3 TNCs to be connected together as if they were over the air to each other. This circuit bypasses the modems in each TNC so that the three TNCs may communicate at high speed. The three way wireline link circuit was presented in the NEDA Quarterly volume 1, number 4 and is also presented in the current NEDA membership package.

Throughput

This term specifies how many bytes sent by an origin station actually reach the destination station in a give period of time. Throughput is a much better number to describe network performance than baud rate. Baud rate only describes the number of bit transitions that may possibly leave a transmitter in a second. Throughput is a statistic that actually means something to an end user. Throughput is calculated either by observation or by taking the original baud rate, given in bytes per second, subtracting out all of the wasted time and overhead due to network protocols, the lost time due to choking and due to collisions. (See Choke)

TINK

Slang for TNC.

User Channel

The frequency designated for users to access the network. This frequency would be devoid of servers and other nodes aside from the one designated. (See LAN, WAN)

WAN

Wide Area Network: This is a system where many servers and nodes may talk to each other. This kind of system is rugged in that communications would probably not be compromised if a single site went off the air. The major problem with this methodology is that if the only packet systems available are of this type then users, which present transient loading, will find that the WAN is unable to support massive intermittent loads during peak usage times. This causes frustration and leads to non-utilization of packet.

Example:

- 145.01, 145.03, 221.11 and 441.0 are commonly used in this configuration.

Wireline Link

This is a connection between the modem headers of a pair or more of TNCs such that the TNCs communicate via their radio ports but without an intervening pair of radios. Because the modems are bypassed the TNCs may talk at a higher data rate than 1200. (See Three way wireline link)

Wink 'N Blink Mod

This is a modification to a TNC2 that allows that the CON and STA lights are used to monitor the RS232 port's DCD and CTS signals. These signals act as PTT and Carrier Detect on the RS232 so making this mod allows an observer to watch activity between the several TNCs at a single node site. This is an excellent diagnostic tool and is fun to watch. This circuit was described in the Fall NEDA Quarterly of 1990, volume 1, number 4 and is also described in the current NEDA membership package.

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word about the gateway and that he doesn't have enough users on the system to really test it. He reported that it is only up full time as of the past week or so. The next three months should show more problems if any exist.

Dana asked about the W1NY BBS. Bob reported that things should be pretty stable as of this past week or so now that he has the 80486 computer up. He mentioned that Dana's message to NETCH didn't get through because NETCH isn't the same as NTECH in the computer's mind.

Cal suggested that TCP/IP in NEDA will fast dominate enough discussion time that we should call a separate network-wide TCP only meeting.

Tadd listed off parameters which might want to be followed closely while testing TCP across the network: What impact does TCP activity have on other network activity; and what impact does TCP activity have on our membership. Tadd mentioned that the goal of linking TCP across the network is to get TCP activity merged with the NEDA efforts, and to get NEDA involved in TCP activity. If we can get more members in NEDA that are involved in TCP activity that we could further the club goals.

Cal brings up a potential problem that recently occurred where CHSTR to IPWMA isn't working well. He asked that Bob get to the bottom of it.

DxCluster

Tadd, Quarterly editor, reported that WB1DSW and K1EA have been talking about an article about the YCCC and DxClusters.

Tadd reported that K1TR, who is the site owner of WNDHM, and K1EA, who is a major mover in DxClusterdom have a site on the Blue Mountain chain in Pa. which may be used to tie Quakertown Pa and Scranton Pa DxClusters together. Tadd reported K1TR has said that if someone wants to instigate a real TheNET node down there that they would be interested. Tadd also reported that work on the BANGOR Pa node is not progressing and that if the anyone is interested in seeing links south of Scranton that the K1TR offer should be taken quite seriously.

Cal mentioned that there is a group in Hanover NH that is interested in putting up a DxCluster. They are interested in putting up a NEDA node and then tying that into VNH via a dedicated link backbone.

Tadd reported on the WA2TVE:HOWIE node in Utica which will be a four port matrix which has a G8BPQ based DxCluster, a G8BPQ based W0RLI BBS, a user port called Howie and a network backbone link to UTICA node. This will allow users of the HOWIE port to connect to the DxCluster and to also access other network stations and services. Cal mentioned that the system in his town might be located at the local college and might have a BBS as well in a system like Howie's.

Kevin mentioned that the 3 way between SWNH, VNH and CENTNH might want to be upgraded very soon. Cal asked if adding the DxCluster at his end of that 3 way will *add* loading. Kevin, Tadd and Dana submitted that so long as all of the users of the DxCluster come from the VNH end of the 3 way that the loading would be decreased by having the DxCluster there but that if users were to come into the DxCluster from SWNH and CENTNH that this would no longer be true. Upgrading of the 3 way to a pair of dedicated links should be a high priority.

Rich, Kevin, Dana and Tadd briefly discuss the usage of the R 2 and R 3 commands of TheNET 2.08 to limit the propagation of dedicated purpose local use ports.

Editor's Report

Tadd reported that the last Quarterly was published at a date too close to the publication deadline. Tadd intends that the next Quarterly is to be on the way to the printer's by the day school starts at the beginning of September. Tadd said that the next Quarterly will also include the packet glossary. This Quarterly should also have the WB1DSW and friends beginner's dialog. However, if any articles that want to go into this issue are not in Tadd's hands by the 17th of August they may have to wait until the next issue.

Dana asked if the Quarterly was printed within budget this last time. Tadd said that he doesn't know. He said that the mailing expenses for this last run were much higher than budgeted because the second class postage permit was not acquired as planned. This is due to the fact that WB1DSW hadn't gotten the minutes when they were finished in time to start the process to get the permit. In the future the minutes must be mailed to the treasurer by the secretary as soon as they are ready. Perhaps they should be mailed to the rest of the board members as well. Because of the lack of a second class permit the postage cost us $1.44 each for 300 copies instead of $100 total.

Dana asked what the status of the rest of the club documents is.

Tadd said that we have money allocated for freebees that hasn't been spent and which was allocated at the last board meeting. Tadd said that he thought that WB1DSW has enough to mail out in response to inquiries but that there is no large cache of them to send to people doing flea markets and shows. Tadd said that a new membership package is in the offing and that he has not been sitting still since the last Quarterly went out. He said that Bob, NQ1C lent him his Mac 2 for a week and a half which expedited production for a while. Dana asked if there are any more of the blue resource manuals. Tadd said that all but 5 of them are gone. Dana comments Tadd on his version of the resource manual presented in the Quarterly. Tadd said that W1FYR printed us an extra 100 Quarterlies so we got 600 total this time. Tadd said that we are getting excellent comments on the Quarterly. W1JFP comments Tadd on the document as well. Dana and Tadd comment on the quality of Bob, NQ1C's pictures.

Emergency Services Committee

Dana said that a number of NEDA members talked to the New York State Emergency Management Office about the network. He said that the state of New York is planning a communications plan based on transmission of data between it's EMO sites. The RACES communications network would be used for backup. Thus the network services that our club promotes is very important. Dana said that many good questions were asked by a F.E.M.A. representative who was at the meeting. Dana reported that the government groups are pretty impressed by what the club has been able to do so far, without government funds. Dana said that the government groups wish to see an ongoing body capable of managing and advising amateurs running a network on a large scale. They don't think that trying to get a lot of fragmented groups to work together would be productive enough to justify federal or state efforts in cooperation. The single representation that NEDA presents may be to our benefit. Dana said that the meeting included projects that were not related to amateur radio but that the NEDA project was praised.

Kevin mentioned that one of the features of the current method of NRS control of the NEDA network allows that the nodes can be reconfigured to strictly handle emergency traffic as a priority over regular traffic. This would be especially useful after the network grows large enough that we can afford the redundancy. Kevin looks forward to the time when the network is large enough that this could be tested without demolishing other network activities. Perhaps in the future we might be using software that would allow for this prioritization to be automated without NRS intervention.

Dana talks briefly about the NESAC committee and the fact that it's usefulness is only just now becoming apparent.

Committee Appointments

BBS Committee Chairman

Cal said that Jim, K1MEA, sent in an agenda item to discuss the fact that he, Jim wants to resign from the BBS Committee position.

Dana talks about the fact that he and Jim had a conversation to discuss what the purpose and scope of the BBS Committee's activities should be. In this discussion Dana had suggested that the BBS Committee chairman's job should be more of a coordinating activity than an actual data gathering and compiling job. Jim had stated that his family and work commitments over the summer and this spring had caused him to have to put aside his commitments to NEDA and that he wouldn't be able to maintain the chairmanship. Perhaps he ought to let the board appoint the job to someone who has more administrative experience. At this point Jim still holds the position and will continue doing the job that he has been doing in the creation of the server lists for the Quarterly. Dana mentioned that Jim is on the board of directors, technical committee, is the chairman of the BBS committee and is the NRS for his area as well as being VP for a local radio club, node op for CHSTR and MTM and running his own BBS. Dana mentioned that this is a common problem for NEDA appointees and this is something that is on the agenda to be discussed as new business.

Cal said that he didn't get a retraction from Jim but that because Jim is not present that we should pass over this until the next meeting.

Secretary's position

Cal said that Dana, WA2WNI put in an agenda item that stated that he wants to resign from the Secretary's position. Dana restates that he doesn't mind being the recording secretary but that he can't afford the 16 hours or so that it takes to transcribe the minutes. He mentioned that the last two meetings were entirely transcribed by KA2DEW,

Dana said that what the club needs is a transcription secretary to perform this duty.

Bob, NQ1C, wonders if it would be reasonable to do the minutes of meetings like most groups do minutes in that someone records the pertinent things that are going on during the meeting, on paper, and then it is all there.

Dana said that some times presenting the issues as they are discussed at the board meeting makes all the difference between being taken one way and being taken another. A vague note scribbled on a paper saying that we discussed a subject is a far cry from being able to look up the specific arguments that were presented. Wells if there is any point to doing the minutes as verbose as they are done for the 85% of the membership that doesn't care to read them. Kevin added that the intent of the board should be clarified through the motions that are passed and the resolutions that are accepted. We shouldn't allow discussion of arguments from previous meetings to be inferred as policy. Wells said that the Quarterly is a fine magazine but that he doesn't read it. Dana agreed that maybe what we need is a recording secretary that is prepared to record the resolutions as they occur. He stated that he is not willing to do that. Leaving a tape recorder running is not distracting to any member. If someone wants to volunteer to be the recorder suffer the distractions then that is fine. Tadd brings up that in the current method of recording of the minutes that at least we can see what the board was thinking when it adopted resolutions and passed motions. If the minutes were all boiled down into resolutions and motions we might find ourselves rethinking matters over and over in following meetings just because there was no way of recovering previous thought trains. Dana said that he has found it helpful to have the minutes in the detail that we've had them. Rich mentioned that at just the last meeting even, the old Quarterlies were brought out to find out why certain decisions were made. Dana shows Rich the compendium of all minutes that Tadd had created. The compendium is sorted by topic so that searches like those made at the previous meeting would be easier. Cal said that he likes having the minutes as full as they are so that he can go back and research topics. He also said that he has made contact with potential node ops whose only contact with NEDA has been through reading the minutes and that they brought up questions on NEDA procedures based on their knowledge of the minutes. This, he concludes is good justification for doing the minutes in as complete a manner as we have been. Cal stated that the job of doing the minutes will probably pass to Tadd as he is the only one who thinks that the quality of the minutes is worth working for. Tadd said that the trick that most clubs do to create the minutes is that the recording secretary doesn't take part in the meeting but rather just takes notes. The person who performs this duty must 1: show up, 2: understand enough about NEDA and about packet radio to know what is going on, and 3: must be able to write real fast. Tadd didn't think that we'll be able to get a volunteer to perform this duty for every meeting. Tadd said that the way that he did the job the last two times was not a direct transcription as a direct transcription would generate about 15 times as much text as the method he uses.

Dana brought up that at any rate we need a volunteer to perform the duties of transcription secretary.

Tadd mentioned that the minutes are required by the NEDA Constitution. Dana said that if we don't publish our minutes in the Quarterly within a certain number of days after

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the meeting that the club must be dissolved. Tadd added that the treasury, after accounts payable is taken care of, is paid to the American Cancer Society. Thus all members lose the remains of their dues moneys.

NRSs

Lindsay has provided notice of intent to resign from the position of NRS as of this meeting date. Cal read from Lindsay:

> I am still willing and subject to time availability to kibitz relating packet and networking and willing to provide EPROMs to NEDA stations and will continuing to maintain CENTNH and assist at NHOEM. I would like to suggest that discussion be had with Dexter KY1M reference to NRS.

Cal said that Lindsay is suggesting a two position system where there is a NRS and a point man where the point man contacts potential node ops and communicates with node ops and the NRS just manages the existing sites.

Cal said that he has talked to Dexter and that he is willing to give this a go although he will need some training. Cal was perfectly comfortable with appointing Dexter if everybody else agreed. Kevin made a motion that we table the NRS discussion until later in the meeting. Dana seconded. Passed.

Assistant NTECH Chairman

Kevin said that we should table this one as well.

Next Board Meeting

Tadd announced that Potsdam NY on October 26th is available.

Don said that it's an area that needs development and having a meeting there might get some people interested. Tadd said, that's not the point for having the board meetings in varying places. Board meetings are boring for locals.

Maps cover non-connected nodes

Besides, Tadd said, there's lots of development in Northern NY and in southern Quebec and Ontario. Kevin said it's between here and there that is the problem. Don said there should be a little map in the Quarterly. Tadd said that it isn't joined up. Cal asked why it has to be joined up in order to be on a NEDA map. Tadd asked if we'll also do Arizona and Oklahoma. Kevin said "Sure". Cal thought that's getting debatable. He said that anything that has more than one node done NEDA style connected together, and that we know will be connected in eventually should be on a NEDA map. Kevin said that this will illustrate areas that need development and that this will encourage more network development.

Next board meeting

Dana moved that the meeting will be held on October 26th in Potsdam. Rich seconded. Passed.

Expenditures

Funding for Postage for Spring Quarterly

Tadd said that the mailing for this Quarterly was paid for by WB1DSW out of club funds. Tadd said that we allocated $100 for the Quarterly by second class. We actually spent $507 including envelopes. Tadd asked for $407 to cover the difference. Bob, QBQ, brought up that this money has already been spent by the treasurer so it should already be reflected in the treasurer's report. Dana made the motion that we make a deficiency appropriation to cover the $407 expenditure that was made on the past Spring Quarterly. Bob, NQ1C, seconded. Passed

HexiPus™ Pay back

A discussion occurred which tried to figure out how many of the HexiPus™ boards were sold by Rich, Dana, Tadd and Howie. No accounting is available because beyond the 15 that Howie claims to have shipped. Dana, Tadd and Rich sold out of the consignment that Howie gave to Dana at Dayton. That money was sent, without receipt to the treasurer. Dana thought that if are doing as well as we are with the treasury that we should pay back Rich as fast as possible. Dana moves that we pay $1000 to WB2JLR against the expenses for the HexiPus™ Project. NQ1C seconded. Cal stated that we do not have a clear picture about what our numbers are in regards to HexiPus™ sales. He said that according to discussion at two meetings ago that we were supposed to get a monthly accounting from the HexiPus™ Committee Chairman. He said that he has no problem approving the payment to Rich but that if we are running a business selling these boards that we should have better documentation. Cal said that he got a message from the treasurer that said that he doesn't know how much money he has received for HexiPus™ sales but that it is bundled in with accounts received for membership dues.

Cal demanded a report of how the consignment to Dayton got so screwed up. Dana said that the accounting was messed up because on the way to Dayton nobody managed to bring a consignment form. So, Howie [HexiPus™ Committee Chairman] should be able to figure out his numbers now that he just got back the unsold HexiPus™ boards These numbers should be available shortly from Howie. The money from these sales was sent by Tadd in check form to the treasurer, independent of dues. Rich said that he sent a check after the Rochester fest that included both memberships and boards. This may be where Herb got messed up. Rich's funds transfer included a breakdown of what was delivered. Cal reviews that Herb was getting checks from more than one source for that one consignment. He decided that the problem was that of the Dana, Rich, Tadd not organizing the funds for that HexiPus™. Bob, QBQ, stated that the treasurer should have been able to keep this straight. Tadd said that the problem is not that Herb couldn't figure it all out but rather that Herb is a volunteer and that what we are presenting Herb is a abuse. If we support Herb the way that Cal wanted us to that maybe we could then ask Herb for better accounting. No doubt we'll get the numbers from Howie as Howie tends to do excellent accounting.

Kevin agreed. Cal said that unless we can do a better job with this in the future that he would prefer not to get involved with this kind of project. Tadd stated that he thought that we sold about 15 were sold out of the consignment. So the total is 30 including the 15 that Howie sold. We estimate that only a few were sold without connectors. That means that we can estimate that we have taken in about $900 for HexiPus™ sales. Cal read that of the original invoice price from Rich of $2612 for HexiPus™ production that we have already paid him $1000. After this motion passes that we will only Rich $612.

The motion passed.

Cal asked how we could expedite Herb making the check to Rich. Tadd said that Herb waits for the Quarterly to come out or for the minutes to be delivered to him. Bob, NQ1C, suggested that we send Herb the tapes and offer that he can transcribe the minutes [lots of oooohs and hissing].

Kevin suggested that we publish our resolutions separately.

Budget for Summer Quarterly

Cal asked Tadd how much the printing will cost this time. Tadd said that he doesn't know how much it will cost or how much it cost the previous time. Cal asked how much was allocated last time.

Cal suggested that appropriations requests for known items should be put in the agenda with numbers before the board meetings.

During the Spring '91 board meeting $100 was allocated for postage and $335 was allocated for printing. Tadd said that we should allocate the same numbers this time.

Dana makes a motion that we allocate $100 to cover the Summer Quarterly mailing expenses and $335 to cover the Summer Quarterly printing costs. Rich seconded, passed.

Funding for HexiPus™ Advertisement

This was carried over from previous meetings.

Tadd asked if there are any volunteers to create this advertisement and to arrange for this. Dana said that he wants to work with Rich to write an article, review and modification list for a magazine. He said that he thought that it can be done between now and the next meeting. He said that we should do a half page or bigger spread on the HexiPus™ in our own Quarterly. Rich asked if this is OK within the bounds of our second class permit. Dana said that Herb said that this is not an issue unless we get lots of advertising. Dana said that he and Rich will do the HexiPus™ add by August 10th to deliver it to Tadd for inclusion in the Summer Quarterly.

Cal said that he'll remove the HexiPus™ Advertising budget request from the agenda until further notice.

Purchases of parts for the HexiPus™

Dana stated that at the Dayton Hamfest he purchased a quantity of diodes and female 9 pin D shell connectors (males have been shipped with the HexiPus™ to date). The reason for using females is that standard 9 pin to 9 pin monitor extension cables may be used to patch a Tiny 2 into the HexiPus™. This makes it easier to use the HexiPus™. The reason why Rich didn't get these in the first place is that everywhere Rich looked the female connectors were much more expensive. Dana purchased these surplus at Dayton. The connectors cost about .97¢ each in quantity but that he will sell them to Dayton for .30¢ each. Dana stated that he will throw in a pile of diodes that he purchased at Dayton for free regardless of the outcome of this motion. Rich said that we'll need 1056 connectors and we only had 300. Rich moves that NEDA buy Dana's 9 pin female connectors for .30¢ each for up to $180. Kevin seconded. Cal requested that a new document is created that shows the use of the new female connectors to be shipped with the HexiPus™. Also the next Quarterly's should have an ad showing the HexiPus™ with female connectors as an option. The motion passed. Dana will coordinate with Howie to get this to happen.

New Business

Error in NEDA Octopus/ HexiPus™ Doc

Tadd mentioned that in all of the NEDA documents all the way back to the Tjp Octopus document that show usage of diode matrix boards for interconnecting MFJ TNCs have had an error. In all cases we've shown that pin 20 is the RTS line for the TNC where in actuality pin 4 is the RTS line. This is also a bug in the MFJ schematic. What this means is that the MFJ TNCs in these nodes are not receiving matrix activity indications so they will be jamming each other. The way that this was detected was by Tadd doing the Wink-N-Blink on MFJ TNCs at the POTSDM node. This clearly showed the problem. Tadd recommended that everybody do the Wink-N-Blink mod to all network node TNCs. This will also show other problems in your matrix implementations.

Freebee publications

Kevin requested that we create our 1992 freebees show up at the January meeting so that we can get them made way in advance of the flea market season. Cal said that he'll put it in the October agenda.

Constitutional Changes

We have before the house two constitutional change items that were submitted at the Spring '91 board meeting. .

Revision of the Constitution to do balloting by mail so that the general meeting may be used as strictly show and tell, submitted by K1MEA and KA2DEW. (see Spring Quarterly).

Kevin proposed we consider the change concerning the balloting. Dana seconded it. Tadd recommended that we vote this change down because it was poorly worded and didn't cover all of the bases. Kevin agreed that it should be tabled. Dana agreed. Tadd listed off several constitutional items which were not stated in the change request. The motion is tabled.

Revision of the Constitution to eliminate the requirement for the general meeting from the constitution.

This was a request submitted by W1JFP. He withdraws it.

New Constitutional revision requests

Tadd has submitted four requests. These are printed elsewhere in the Quarterly. Tadd stated that he hopes that there will be some board of directors discussion of these issues before the next meeting and that any members who feel one way or the other on any of these issues should make their wills known to W1JFP @ W1JFP.NH.USA.NA.

Board Position Vacancies

Cal asked for a feeling of how many board nominees there will be for the vacancies that will exist at the end of the year. The feeling is that there will be many. A review of the current Constitution ensues.

Node Op vs NEDA, part 2

Tadd spoke on the subject of node ops being disgruntled with NEDA NRS control. He stated that a group of node ops in western NY have formed their own organization called the Great Lakes International Digital Association, or GLIDA, which plans to run a TheNET and G8BPQ based network using dedicated point to point backbones. Currently the nodes in that group are propagating in the rest of the network. Some of those nodes are not sysopable by NEDA NRSs or by WB2JLR. Kevin said that he and Rich has most of the sysop passwords. The GLIDA group proposes to form a networking group independent of NEDA and to gateway to the NEDA network.

Tadd also added that Linds, NR1N, is resigning from the NRS position. Tadd said that he has spoken to Jim K1MEA, who is NRS for western Mass, who said that he doesn't think

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that he'd want the job of NRS, anymore, if it required that he perform management of too many more than the four nodes that he is currently managing. Right now two of the nodes that Jim sysops were installed by him in the name of the repeater club which Jim is the vice president for. Jim's NRS load has been light compared to that of WB2JLR, WA2WNI and NR1N.

Tadd said that WA2WNI has indicated that he also wants to resign from the position of NRS if some major changes don't take place at this board meeting. This is because Dana has found that NEDA control of new nodes has been a stumbling block for Dana in trying to promote the club.

Tadd said that Rich WB2JLR has handed some of the duties of NRS in his area over to Kevin, WA2VAM, as the load was getting so high that Rich was missing out on family activities. Rich stated that he was getting burned out. Kevin said that he thinks a lot of this is caused by the fact that the node ops were not doing any of their own sysopping. Kevin said that the way that NEDA started where all of the passwords on all NEDA nodes were the same. He said that the NRSs were getting burned out because they were given total responsibility for all of the nodes in their areas. Kevin said that he thought we should back up to where the NRSs were helping hands instead of total controllers. Tadd said that at the first NEDA board meeting the GANI was designed and the NRSs were given their responsibilities and restrictions so that WMA, owned by NoBARC, would come into the network. Tadd said that NoBARC, through KJ1K, wanted assurances that only official persons would be controlling their node and that those official persons would be few and identified to KJ1K. The GANI (Guidelines and Agreements for Network Interface) was a treaty between NEDA and the node ops. Tadd said that this was a mistake even though he had a major part in coming up with the idea. Tadd said that Lindsay's response to tampering at WNDHM was a reaction that would have been out of place a year ago. He also said that now that Lindsay's reaction has been accepted by the club that people are so afraid of stepping on toes that things are getting much less friendly. Now nobody, including Lindsay, wants the job any more.

Tadd said that only the NEDA group of old has the knowledge of how to sysop the nodes. Because there is no training curve Tadd said that eventually the club will die. Tadd said that Dexter was the only person that he had heard about the expressed an interest in learning how to do the NRS job. Dana said that WB2QBQ was learning on his own node stack and that KA2TFC and N2JYG also had expressed interest. Tadd asked if TFC and JYG (both western NY node ops) want to be part of NEDA while they are doing it. Dana said that their interest predates the GLIDA organization. He said that follow-up didn't occur because we didn't have the capacity to do a timely response to their interest. Kevin said that a big problem in the western NY region was caused by an individual in the Buffalo region that was misrepresenting NEDA and claiming to have inside knowledge of NEDA. Dana said that we shouldn't underestimate the damage that this has done to the club.

Tadd stated that he believes that the GLIDA group is not alone of the node ops and potential node ops that the club has and will loose from NEDA. Tadd handed out copies of and read a paper.

NEDA: How did we get here and where are we going?

NEDA as a club has been wildly successful in promoting packet radio networking. I'm sure that somebody with 20/20 hindsight could have done better but I don't believe that anybody coming from 1989 could have done better. Certainly nobody else *has* done better.

In the areas covered by NEDA LAN ports it is now possible for two meter users to connect to any of dozens of bulletin board systems, DOSgates, DxClusters, CROWD nodes and callbook servers. There are hundreds of packeteers accessible from the network. Stations can run several conversations at a time and not have fear of getting disconnected suddenly even while conversing or using servers over a range of several hundred miles. When we do get disconnected we are annoyed and we get a little exasperated. That exasperation is a serious compliment to what we have created!

In most areas of the country a connection to another station 50 miles away is rare and must be handled gently. Having more than one line of text outstanding in your TNC, waiting to go out, is a serious sign of trouble. Connections that last 15 minutes are very rare. Real time user to user connections more than two RF hops away is a luxury that cannot be afforded and is considered Poor Operation On Packet (POOP). Connection to a BBS further away than the local BBS is very highly looked down upon and may lead to the user being locked out of all BBSs in the region. DXing to connect to the furthest away station is so bad that stations who persistently do this are almost banished from society. CROWD nodes are unheard of, frowned upon or just plain useless. Network developers claim that real time packet users are not an affordable luxury. On the other hand, BBS ops claim the right to use VHF for forwarding and have priority over users. Some BBS ops have publicly questioned the usefulness of having users at all!

Servers claim frequencies. Thus 145.09 could be considered the K2GUE BBS channel. 145.07 might be the WB3LCO callbook server channel. Users in one town aren't able to connect to servers in adjacent towns entirely due to terrain. A statement like "I'll leave the file for you on my BBS" is meaningless unless both stations are in the same community.

Now we know what we came from. It's easy to forget that this is how bad it is everywhere else. Nestled safely in range of the NEDA network we can moan about how it is takes too much effort to work together. Perhaps we are safe from returning to what most of the country still suffers from. Perhaps we aren't safe. How long would it take us, without NEDA, to recover from MTARA pulling down CHSTR or from WA2VAM selling off AUBURN, HOMER, CRTLND, SYRCUS, and CNY? Are we safe? Is this complacency or what?

If we have reached a public awareness of the necessity for dedicated link backbones and LAN ports then it is entirely because of

NEDA.

I don't think that it is time for NEDA to die just yet. *The reason that I even mention the death of NEDA is that there has been a certain consensus that NEDA either is dying, should be dying or is about to die. I don't think that we should let this happen. I do think that NEDA should be taking a good look at the role that it must play in the future. I don't think that it should be the same role that it has played to date.*

Up until a few months ago the only nodes that were part of any working packet network were part of the NEDA network. This is no longer true. ***All*** working nodes were influenced by NEDA however. (It is interesting to note that some readers of this may say to themselves *My node works and isn't built on NEDA's guidelines!*. These readers should withhold judgement until they've actually worked in the NEDA network from a LAN port!)

What has happened recently is that node ops have decided that the NEDA *rules* don't give them enough freedom to learn on their own. I'm not sure that they know what the rules are. NEDA has however done a pretty total job of stomping on independent spirits. Some of those independent spirits have done a pretty good job of stomping on NEDA! I'm not putting down these people, nor am I defending NEDA. I think that NEDA needs to make adjustments to allow for all hams. NEDA especially needs to loosen it's grip on the packet network. The network has gotten too big for the few to run. The very existence of network wide system administration has made it impossible for newcomers to learn for themselves how to make a network run. It's all well and good to write down guidelines for making a network but a ham wouldn't be a ham if he/she didn't have the will and interest in going out and working it out all over again.

So, experience has shown us two things: Point to point backbones using TheNET and an open policy towards hackers and network usages is definitely the way to cause the network to expand; and network-wide administration leads to name calling and overworked hams.

I think that what we really want is a network based on point to point backbones and with all stations having equal priority (thus giving keyboarders a chance) but with no network-wide control. I think that some method of reward for good practices is necessary. Obviously performance is a reward but one which is not obvious until the new system is well utilized. Our current methods of reward are: propagating their nodes on NEDA network nodes lists; and broadcasting a nodes list to them. If the nodes are not operated in accordance with NEDA guidelines the node is not listed and nodes are not propagated. This determination is made by a NEDA appointed person, i.e. the NRS. The time required for the NRS to react and the responsibility hanging over the NRS is, in my opinion, the source of major strife and cause for mud-slinging and apathy.

My point in this article is that we should look at the good that the club has created and remember that although we may be at a plateau that we aren't done yet. I think that it is time for NEDA to change. Hopefully we can decided together what NEDA should be doing while working towards the goals set out in the club Charter.

Thank you for your attention and good work.

Sincerely, Tadd, KA2DEW, charter member

Tadd reviewed the NRS situation as he saw it. He said that of the four NRS positions, NR1N - Eastern Mass and NH, K1MEA - Western Mass, WA2WNI - Eastern NY, and WB2JLR - everything else, that NR1N has resigned, WA2WNI has threatened to resign, K1MEA has expressed non-interest in expanding his zone of coverage, and WA2VAM has been making changes in WB2JLR's area because WB2JLR was getting burned out. Kevin interrupted to say that he had only done that with node op permission. Tadd said that he didn't think that the NEDA specification for the NRS position is rational. He said that the job is too difficult. He said that he doesn't think that the network can develop to be as big and successful as the club wants it to be with NRS control and responsibility.

The reason that we have restrictions on node implementation and have NRSs was to protect the network from abuse by stations demanding more than a fair share of network throughput. Originally the NEDA technical committee thought that by just stopping nodes broadcasting and by ignoring non-NEDA nodes this problem would be kept in check. Then the NRSs were added to enforce this. This required the GANI and things have escalated since then. Another part of the problem is that we wanted to have all nodes in the network show at all other nodes in the network and yet to have no outside nodes show anyplace in the network. This was considered positive reinforcement to nodes who took part in the network. Now we're running into several flaws to that plan. One is that NRSs burn out. Another is that we have more than one hundred ports and listed servers. Kevin said that one big problem is that we didn't have local development meetings. Tadd said that at every single meeting we've talked about holding local meetings. Kevin said that he has had meetings with local interested parties. Tadd said that in order for this to work we have to have publicized local meetings that are open to all interested parties.

Tadd stated that we came up with a solution to a problem, that led to the NRS. He asked if there was any disagreement to the fact that the NRS solution has not worked out. Kevin said he disagrees in that the NRS was not implemented correctly. Dana said that he has an additional problem in that being an NRS is such a bad thing that there are potential node ops that just won't speak to him *because* he is the NRS. Dana said that he wants to abolish the duties of the NRS and dissolve the position and allow those who are currently serving as NRSs to take up jobs as coordinators of local packet network development if they want. Tadd said that he agreed. Tadd said that we have a problem and that is that L4 from end to end of the network can be done and that any two stations can do end to end trafficing that over competes with other users. He said that this is the problem for which we

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created NRSs, the GANI, node broadcast limitations and the fact that only TheNET is used. Dana and Kevin argued for a brief bit about why NRSs were created and what were their original duties. Tadd said that he is not picking on NRSs, the GANI, node broadcasts in or out or TheNET. He said that all of these restrictions were required to fight a problem.

Reduced Quality, fewer hops

Tadd said that there is a solution to the problem that does not require any of these limitations but that also does not allow end to end routing across the entire network which he said he thinks all will agree doesn't work anyway. Cal said that connecting all the way across works. Tadd said that it works better by connecting hop by hop. Dana said that he doesn't think that it is practical right now to connect further than a third of the way across the network per step. All agree. Tadd suggested that if we just require that only nodes that are within maybe four links away are allowed to show at each node that most, if not all, of our network management problems will be made less important. Cal asked if this just means that we are setting the quality values such that only 8 TNCs away will show. Tadd said yes.

Making NEDA more relaxed

Tadd said that he has a couple of phases in mind in a plan to convert NEDA to a more relaxed networking environment. Phase one is to change the default NEDA parameter specification such that node sites only show up 4 sites away.

Sysop Control

Phase two is to give the node sysops total control over their own nodes and remove the threat of non-inclusion in what is called the NEDA network. This removes the NRS responsibility of keeping an eye on all of the nodes. Tadd said that this allows the node owners to make their own rules. NEDA would have no say over what they do. The only thing that NEDA holds over any node op's head is in how NEDA chooses to show the node on it's maps.

Local Meetings

NEDA would require a local meeting every three months in every locale. Minutes are optional. An announcement in the Quarterly and via local BBSs are a good and perhaps a review of topics covered could be published after the meeting, via the Quarterly and via the local BBSs. It doesn't matter if NEDA people are there or if people that are there join NEDA. It is most important that the meetings occur. If there isn't a meeting close enough to an interested person then he/she should call a meeting. Tadd said that he thought that an hour is a reasonable distance for a person to drive to a local meeting. In some areas there might need to be several different local meetings. This is *very* important to the success of network development, Tadd said.

NRS figurehead - NTECH purpose

Tadd said that he thought the NRS position should be reduced to a figurehead. The person might want to be knowledgeable about how to sysop nodes and what the parms mean but that he wouldn't have any responsibilities beyond that.

The purpose of the technical committee becomes that of observers who will document what the network looks like. A report in the form of statements and maps would be presented in the Quarterly.

Standards and Practices

NEDA would still make suggestions as to proper operation. NEDA would publish a document called the Standards and Practices for NEDA network development. The maps would show whether a node is installed within standards recommended by the S&P document.

What this allows is that each node op can create his own methodology and operate within it. If a group of node ops wants to band together to create it's own network, that network can exist as part of the NEDA network. The NEDA network becomes what NEDA documents as the NEDA network. There is no problem with certain sections of the total network operating under locally generated guidelines. This way experimentation can take place and the knowledge base for packet networking will expand.

Some groups in the area of NEDA have already taken a lead in developing their own standards. How these groups interface with the existing NEDA network becomes a local issue with the node ops that border between the two networks. Hopefully this will allow closer cooperation between packet network builders in all areas.

No longer just TheNET

After approving remarks Tadd spoke further in regards to how existing groups that were counter to NEDA's TheNET only policy would be able to fit well in the new structure. Perhaps NEDA could become a documentation organization to fill in pieces that the other clubs were not able to fill.

Maps

Tadd spoke on how the maps would have to be consistent across all of the networks such that network performance can be gauged by each reader of the maps. Kevin asked if two meter networking would be supported or shown. Tadd said he didn't think that this was a good idea. Our maps already show links that are outside of the club network. Some of the links shown are 220 and 440 non-dedicated links. Some of the nodes shown are not NEDA nodes.

Tadd proposed that as long as we have technical committee volunteers that will come up with this information we should show all nodes, on the entire planet. If we can get technical committee volunteers to map them, then why not? Tadd asked what the point of NEDA is. To promote packet radio? Then lets get to promoting and stop trying to control packet radio.

No more packet police

Rich said that one thing that he likes about the idea is that in Buffalo there was a guy that every two weeks would change his parms and his ports and links. Our only response to that problem was to gateway to him. The other operators of nodes and servers in the area got a dim view of NEDA from this. They perceived NEDA as being packet policemen. Where if instead if going by the Practices and Standards they just didn't get the ***good mark*** on the map. Once we implement the system where nodes only propagate four nodes this kind of rampant reconfiguration would be more confined and wouldn't require the *gateway* action.

Public Education

Dana said that NEDA needs to go back and focus on public education. That's the bottom line he said. Dana referred to a quote in a previous Quarterly that he had submitted that said that rather than punishing missdoers that informing their better judgement would be more progressive. Dana said that if a ham doesn't like his local network that he should be able to get the knowledge from the club to know what the problem is and to know how to implement a change or new equipment to fix the problem. Along with educating the people is the process of improving the information flow about what is going on at large is very important.

Dana related an episode on a CROWD node. Dana said that he had a conversation with a BBS op on the CROWD node who related to Dana that his perception of NEDA was that they were a selfish bunch. This was very interesting, Dana said, because that BBS op, who was located hundreds of miles from where Dana lives, was using a UHF port at his local node for access that was owned by Dana.

NEDA publicity and scope

Wells brought up a point that NEDA was not appealing to users in it's magazine. He also decreed that the word technical was a NEDA word and that NEDA's over-usage of the word was a serious problem that was impairing promotion of NEDA and packet radio. He said that the meeting that we were currently holding was totally useless to the average packeteer. Kevin and Dana defended that by stating that board meetings were only open to voting members and that what Wells was looking for was a local meeting or a general meeting. Local meetings, Tadd added, would be scheduled and staffed by people interested in holding them. It being true that Wells was a member and a packeteer, Wells should make sure that there was a meeting in his area.

Input from Members

Wells said that for the last hour and a half he'd been listening to a conversation about whether technical standards should be tightened or loosened. Tadd threw a curve and asked Wells what his input was. Wells said that unless we wanted to piss off everybody that we should ask the rank and file. Kevin said that the rank and file don't own the network. He said that we were in cross purposes because NEDA wants to get input from club members but that most guys who pay $15 to get the maps don't have a dime into the network. Wells said that the average guy who uses the telephone doesn't own the company. Tadd said that the average telephone user has input on what phone company has the franchise in his local community.

Quarterly and NEDA Competition

Tadd derails the conversation at this point with an advertisement for the Quarterly. He asked that anybody who has good information or topics to discuss should get them printed in the Quarterly. He said that there is a lot of information in the heads of members that could be of enormous value both to network builders and the quote *rank and file*. Tadd said he doesn't like that phrase. He said that there are people who are building networks who fear that NEDA is competing with them and thus will not put their good expertise into Tadd's hands for the Quarterly. Tadd said that he feels that NEDA should get out of the competition business. Even though NEDA doesn't own any of the hardware it certainly controls it. If NEDA doesn't like what a node op is doing the node op is ostracized. Tadd said he doesn't think that NEDA as a club should be involved in those decisions but that it should be a local issue to be settled between neighboring node ops. Kevin said the club has never ostracized anyone. Tadd said KB4N, N2AYY. Kevin said they didn't agree to be part of the compact. Tadd said that the club shouldn't be involved in those agreements. Kevin said that he will have some kind of understanding. Tadd said that this is the point where individuals and the club go their separate way. Dana said that this is the difference between a site op's decision and a club decision. Kevin said that NEDA messing around in local issues was a bad idea from the start. Tadd said that it was his idea and he agreed now that it was a bad one.

NRS problems

Dana said that there is a perception that NEDA, through the NRSs are the network police. He said that the name NRS has been muddied bad enough that it can no longer exist in any form. Dana said that if NEDA continues to have NRSs that he doesn't want to be one of them.

Tadd said that he suggested that NEDA eliminate not only the NRS but the whole concept of the NRS. Rich asked who decides what networks meet NEDA standards. Tadd said that the technical committee's duties include gathering the information to make the maps. He said that if Kevin as a node op doesn't like the guy to his south and doesn't want him on his nodes list then that is Kevin's decision. Tadd said that if Rich as technical committee member thinks that this doesn't agree with NEDA policy then the maps show that Kevin's node is non-conforming. Nodes broadcasts don't come into it. Kevin's node would still show on the map but there would be something on the map that indicates that the node doesn't pass all nodes that conform to standards, or something like that. This method of reporting has to be described someplace. Dana said that because local communications will be assured by the local meetings the mapping process will be more of a matter of trust than of inspection. Dana said that people will want to follow the guidelines that the club comes up with because it will work better. Tadd said that there are subtleties in network building that may not appear to be improvements on lightly loaded circuits. Multi-way links, for instance, work just as well as point to point links until the loading gets high. Wells pointed out that being too technical is steering people away from paying attention and that by offering education in the guise of simplicity might be more successful.

Tadd said that he is afraid that people will make compromises in their network implementation in the name of expansion. Compromises which will cause things to fail or get overloaded in a non graceful manner once things become used. Also these compromises might make the upgrade curve too difficult. This would lead to breakdown and drop out of network sites or at least of active participants in network growth. Tadd said that we should make distinctions on the maps Dana said that we should be good salesmen and try to talk up the *right move*. Tadd stressed that we have to have maps. Don said that we should have maps and the maps should show nodes that meet performance and designed standards. Nodes that don't meet the standards would either not be shown or shown with marks indicating their deficiencies. Tadd listed a couple of dozen possible standards and deficiencies. He suggested a rating standard such that every circumstance could be covered. Tadd said that he is worried about node ops excluding particular services. Tadd

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wanted to use the maps to pat good doers on the back, not to mention informing the users of what exists. Don asked which nodes are three ways on the current maps. Tadd said that he doesn't know, that you can't tell with the current maps. Don said that we need to go to the 4 hop node limitation. The number of nodes showing up on nodes lists is approaching overflow.

Tadd said that if we relax the rules as he is asking for that the network, as we see it, will be expanded tremendously. There will be no way, unless we adopt some new rules, to tell the difference between the players who are playing to win and the players who are playing to get by. Don suggested that we show all of the players and denote which ones are playing by the rules that we come up with and also denote which ones are not, and in degrees of performances or showing whatever exceptions are being made or rules not being followed.

Making the rules

Tadd asked who is making the rules, who checks it out and how specific are we going to get. Don said that we still have the GANI. Tadd said that the GANI talks about how the NRS is in control of the nodes, how the node ops must report changes to the NRS and how the NRSs are appointed by the board of directors. Tadd said that the board should not appoint NRSs, that local network control, if any, is appointed by local network operators and if they have local meetings that they can determine this any time they want, independent of NEDA.

Cal interrupted at this point and said that he is not sure that the conversation that we are having will bring us to the conclusions that we need by the time we want to leave tonight. He asked if there is anybody who objects. Tadd said that he does and Tadd said that Kevin and Dana do. Cal suggested that they put a time limit on the discussion. Kevin said that we can table the discussion until we work through the remainder of the agenda but that how we handle network management is germane to *whatever* we do. All agreed.

Dana read from the membership package. It said

> Why NEDA? NEDA was formed in the fall of 1989 by seven hams who had been instrumental in the activation of nodes forming a cooperative network. NEDA's goals are: To form and maintain a reliable and consistent long distance packet network; To educate amateur radio operators as to effective methods of long distance packet network construction and operation; To encourage participation by individuals who could provide equipment for expansion of the network and creation of redundancy to the network's major links; To provide a common network that can handle the communications demands placed upon it by a wide variety of different users; To provide a forum for sharing resources.

Dana said that we need to fall back to basics.

Don and Dana said that we should table it now. Tadd said that at some point before the end of the meeting we must continue this discussion because we have to make some decisions and the board needs to be together to do so. He added that in a couple of hours we're going to be down to two NRSs, one of whom has already announced that he isn't really interested in sysopping more than four nodes. So Rich is going to be the only guy. Dana said that if he is convinced that there is going to be immediate action that he will postpone his resignation. Dana said that he would be happy if there was an executive session and that if everybody that was here would be there then lots of work could be gotten done. Cal said that it is a little late to call one now as some of us have plans. Dana and Tadd suggested that it doesn't have to be tonight.

General Meeting

Cal called us back to the agenda. The current topic is the discussion of the general meeting and who is going to run it.

Local Meetings

Tadd said the question of whether we need a general meeting or not is very dependent on the success of local meetings. He stresses that it is very important that every interested packeteer go to a local packet meeting. Tadd would like to see a local meeting, close enough for every NEDA member to be able to go to one, held at least four times a year. This way the node ops, server ops and all other packeteers would be able to get face to face meetings with each other. This is highly desirable Tadd said. This is the way that packet radio could be made to grow and for all hams to get what they can out of packet radio. The meetings could be announced in the Quarterly, as well as on local BBSs, at general purpose radio club meetings and on VHF voice nets. Tadd said he'd also like to print highlights and decisions from those local meetings in the Quarterly so that all might benefit. Tadd would like to see a consensus generated from the local meetings as to whether, and where, an all-NEDA meeting should be held. The constitutional change requests that he put in would allow for that meeting's purpose and scheduling to be more versatile.

Tadd said he would like to see five or six local meetings announced in this Quarterly. He thought that the local meetings will make or break the club and the purpose for the all-NEDA meeting. He'd like to see that everybody that is present either went to or called a local packet meeting, even if it is held in a local fast food restaurant. Rich said that he thought that this is a good idea but that it shouldn't be a law or enforced. Rich said that he'd rather spend his time going to four local meetings than to drive five or six hours to go to an all-NEDA meeting.

Tadd brought up the elections by ballot change. He said that having the elections at the annual general meeting would only make sense if that meeting was a very large event.

Constitutional changes

Tadd said that he is submitting four Constitutional change requests. One copy of each was handed to each attending board member or alternate. These will also be printed in the Quarterly (elsewhere).

Dana said that hopefully there will be an executive session to discuss these changes at length and that these will be brought up at local meetings as well. Comments must get back to the board members before the next board meeting.

Wells brought up that if the club abolishes the general meeting that NEDA will have removed the only club function that a voting member is allowed to exercise his voting rights. He said that Tadd is proposing to replace a organized club event with meetings at MacDonalds. Tadd said that he wants to have the local meetings regardless of the general meeting. Cal said that if the general meeting is eliminated from the constitution that the elections would be held by mail so the voting member still gets his vote but that he doesn't have to drive to the meeting to do it. Kevin said that we will have an annual meeting anyway and that is where we'll do the ballot counting. Kevin said that when the club Constitution was designed that it was done to safeguard the interests of the founders. The fact that voting was done at the general meeting was that this made sure that any party that had a say in the club was interested enough to show up. What we are doing now is trying to fix mistakes that we made early on.

Kevin said that NEDA board meetings were the worst meetings to come to because most of the conversation relates to how the club is run, not how packet radio works. Wells said that he can see why we're about to have four open seats on the board. He also said that it will be along time before we can get anybody to go to two meetings in a row. Tadd said that this is not true, Don has been to two meetings already. Kevin said that it takes effort to get these things going and that we have put an incredible amount of time, money and energy into NEDA. He said that there are seven states and two provinces that have high quality network hardware that owes something to NEDA. Wells said that if NEDA went away all that hardware would still be there. Kevin said that this was because NEDA didn't own the hardware. Tadd said that if NEDA was gone and Kevin moved to Milwaukee that it might take a long time before Albany could once again talk to Syracuse. Tadd said that it was unbelievable how complacent that we have become and how impossible it was for a station in NH to have a QSO with someone in Syracuse two years ago. Tadd asked Wells if he was on packet two years ago. Wells said yes. He asked if Wells could packet to Syracuse. Wells said he didn't have any reason to.

Kevin said you couldn't. He said that the 7 people who started NEDA had a tremendous amount of commitment and that the commitment was still there. Kevin said that Herb backed out because he really upset with the meetings and that Kevin can't blame him because he got really close to walking out as well but Herb stayed in and provides a tremendous amount of technical support for the organization. He said that the commitment among the board members is to see NEDA grow. He said that we are struggling desperately to make NEDA more democratic, to bring more people on and to divorce the technical operation of the network from the overall goals of NEDA. Kevin said that giving birth is a difficult process and that we're still in that process.

Bylaws

Tadd described the document that he was creating that specified the positions of each NEDA appointee and elected member. He said that the document was a bit hard on each of the people and that he was looking for more feedback from the board members. So far only three of the board members had seen the document. The NRS parts will obviously have to be changed. This topic is tabled until the next meeting.

Agenda Item: NRS position, Transferrable??

This item deals with the discussion that is being held to the end of the agenda so this too is tabled until the agenda is finished.

Agenda Item: Node name change advance notice

Rich said that this is an education issue. Cal said that *how information is disseminated* should be addressed. Tabled.

NEDA Relaxed Rules

Kevin said that the club should do away with the GANI and create a document called *Standards and Practices*. This would list all of these things which are voluntary and good methodology and would specify technical standards like Rob's document did on rational for TheNET parameters. We should follow this up with the rules for these things and add items as we define the pros and cons behind them.

Motion for Standards and Practices

Dana made a motion that we direct the technical committee to create a replacement for the GANI called *Standards and Practices*. This would be for network operation and would be based on technical standards and experience. It would include courtesies and would be open ended, a living document. The document would be published Quarterly. In the current Quarterly we publish that we are working on the document and that the GANI has been eliminated. The chairman should work with his committee and anybody else who wishes to work with him. This will be brought to the next board meeting. Rich seconded it. Rich said that he will work on it. He thought that it can be put on a couple of pages. Dana recommended that Rich break this up into topics and assign sections. Dana comments that the GANI creates the NRSs. The Standards and Practices document must describe the NRS as information management assistants. Kevin things that the NRS should be the guy who helps node ops sysop their nodes. The node owners can give this permission. Dana suggested that this would be the Regional Information Coordinators. Tadd suggested that the attendees of local meetings could create this document. The purpose for the first local meetings is to decided how you want to run your own area network nodes. NEDA's relationship to your local area is determined by you at your local meeting. This is all part of the document. The motion passed unanimously.

TCP over the NEDA network

Tadd said that although this question may become a moot point when the new document comes out that right now it is not a moot point. Tadd suggested that this is no longer a test. Tadd proposed a guideline that any TCPer may connect to the network via a dedicated point to point link on 50MHz, or 220MHz or above. Currently there are three TCP stations in the network. All three have dedicated links. Tadd said that he thought that the TCP operation is important enough that the club should give it it's whole hearted support. Dana asked about the fact that they could only propagate four hops. Tadd said that this should be manually overcome for the short term but won't be a problem once we get a couple of NOS nodes up at other sites. Don suggested that MSYS nodes that are on dedicated links to the network can now become TCP interface stations. Rich asked if we have to worry about window sizes and things like that. Tadd answered yes. Rich said that this is no control over that. Tadd said that there isn't any control except at the local console but that all node ops need to worry about it. There will become a required level of trust associated with operating in the network that we are creating but the NEDA board of directors won't have any *control* over how the network is used or abused. Right now we allow

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each user in the network to have four windows in progress per stream for each two nodes that are in use in each connect. This means that a single user or server can abuse the network viciously by himself even within current rules. It is important that peer pressure is applied to stop such abuse. Tadd said that he doesn't think that the TCPers will do any worse to the network than some of the BBSs do now. Tadd said that he recommends that we allow four windows across the entire network from any TCP station to any other TCP station, per stream. All agree. Rich said that we should recommend any TCP station to connect through the network and use a dedicated link to make the bridge between the TCP station and the TheNET network. Other recommendations will be printed as part of the Standards and Practices document. Tadd suggested that TCPers should be treated as nodes and that they be defined as such. Rich asked if we care if they run MSYS or NOS or any particular version of TCP/IP. Tadd suggested no.

Don asked if the reason for not having IP stations connecting into the network on the TheNET 2m frequencies was to keep the poor users who monitor on the 2m frequencies from going nuts. Tadd said that this wasn't what he was concerned with. Tadd said that what he was concerned with was that TCP stations were very nice for doing server type activities like uploading files and being used as mail drops etc. Any activity, Tadd said, that causes a station to transmit data at a higher rate than 1/200th of the maximum theoretical rate for a channel when that station is hidden from others in the LAN, is an activity which will cause the station to create and to suffer from hidden transmitter syndrome. TCP stations are inherently high volume data generators and therefore in order to see decent performance the TCP station will have to have it's own link. What's the point of having a thousand dollar computer for communications purposes and then to sacrifice performance by wimping out on the communications channel, Tadd asked. Tadd said that there should be only one source of major data on a channel in an area. If a TCP station is operating on a LAN channel and is not the LAN channel node himself then he will be causing collisions with other users. The other thing is that a TCP station will not perform well in a situation where collisions occur. Don said, it backs off a lot. Tadd said that it can back off a lot but some have been doing experimentation with making it not back off. That's not the point. The problem is that you get collisions. Once a second station starts to depend on your TCP station and your station doesn't have a dedicated link then you both will suffer doubly.

TCP testing is over

Cal said that we have a proposal that the test be terminated and that the network be opened up to TCP who have a dedicated link into the network and who operate in a friendly cooperative manner in regards to window sizes and retry rates. They operate with the same level 4 guidelines that other TheNET nodes operate under. Rich said that we are still researching but the test is ended. Kevin asked about choke and unchoke flags. Tadd said that this is less important once we start dealing with only 4 hops and that TCP/IP does a different process in regards to choke and unchoke.

Dana Proposed that the test be terminated but research be continued, and that the network be opened to TCP/IP effective immediately using the same parameters and link methodology currently applying to other NEDA network nodes. Rich Seconded. Passed

Clarification

Rich asked for a clarification on the *NEDA relaxed controls* issue. Rich proposed that WZ2B, who is currently linking into the network on 1273.0MHz with his TCP station might instead link into Rich's node directly on the 144.99MHz user LAN. What, Rich asked, if anything, could NEDA do about this? Dana answered that since this would be a crazy thing to do that Kevin, who owns the nodes that are Rich's neighbors in two of his four directions, would probably declare Rich a bozo and cut off or restrict operation in and out of Kevin's nodes from Rich's nodes. The person doing the maps in the area would show Rich's user port as not being a user LAN and that the link between Kevin and Rich as not being open or whatever it gets to be called by the Standards and Practices document.

Deerfield hamfest

Tadd said that he would like to see volunteers to run a NEDA demo station and booth at the Deerfield hamfest.

Public Relations

Kevin recommended that this be tabled until the next meeting when we have the Standards and Practices document in progress. Dana and Cal agreed.

220 Band Plan

Dana discussed the Upper New York Repeater Council's band plan. 223.4 to 223.46 are available for packet links, as well as packet LANs at 223.54 thru 223.58. These all would be coordinated through the repeater councils. Also there is a 100KHz packet channel at 223.66 to 223.76. Dana proposed that all stations operating packet services and nodes on 220 should immediately file with the local coordinating councils. Dana asked that we get unanimous support from the board of directors that NEDA thinks that having two different segments of a couple of channels each plus a wide band channel. Dana moved that we support the recommendation of UNYRepCo in it's 220 band plan. Rich seconded. Passed. Kevin suggested that 220 is the best band for long distance linking.

What do we do about people wearing too many hats?

Dana thought that the new plans will help this.

Kevin proposed that we table this.

Rich said that relaxing the network rules will make things a lot easier.

All agreed that the positions that they were appointed are available for any other volunteers to take up. There are plenty of jobs.

Tadd said that any job that he takes effectively eliminates any hope of anybody else volunteering for them. He hopes that everybody reading the minutes realizes that he's looking for a replacement.

Dana recommended that we figure out a way to promote the fact that more people may volunteer for meetings. Perhaps if we have success with the local meetings more hams might be motivated.

Cal suggested that he's a little worried about things getting out of hand when we reduce the NRS responsibilities. Tadd said that the NRS position is replaced in purpose by the local meetings.

v2.08 and nodes broadcast control

A discussion occurs about using the v2.08 chip's nodes broadcast control to turn off broadcasts on all user ports. All agree that this is a nice feature of 2.08. All cheer NJ7P for his good work with that software.

4 hop propagation

Cal asked when the four hop node parameter change will take. Kevin said Sept. 15th. Tadd said Sept. 30th. Discussion occured. Time to live cannot be changed remotely in v2.08 so all of the 2.08 EPROMs will have to be changed out. This might take a while for 42 node sites. That should be around 150 EPROMs. Cal requested that a complete change document is printed.

Cal proposed that the reduced hop implementation will be announced Sept. 15th. Implementation will start September 30th and be completed by October 20th.

Kevin expressed his fears that by relaxing the rules that most nodes will be reduced in performance and usefulness. Tadd proposed that Kevin's systems will not be reduced in performance because with the reduced hop implementation and relaxed rules Kevin has more direct control of his own system and he and is neighbor node friends will keep that from happening. Tadd said that by implementing the new practice we allow that Kevin can has the system run his way in his area but that other hams that want to run things in another way can now be part of NEDA even if he doesn't like to do things the way that Kevin and Tadd do. This lets more people have more fun doing things in their own way yet working together with NEDA in whatever way they want. The Standards that we create describes how NEDA will map things and the practices describe recommendations. Practices will be adopted in a locale by locale process and will be modified locally. NEDA will publish a version of the Standards and Practices as updated as is possible, each Quarterly.

Cal asked when the correct TheNET parms will be in the hands of everybody. Tadd said that he'll publish these parms in the Quarterly which will be in everybody's hands on the 15th. Rich volunteered to send out the data over BBSs. Dana, Kevin, Rich and Tadd will bang this back and forth via mail, telephone and via packet.

Dana suggested that input on this should be garnered from the local meetings.

New Nodes

Cal said that we covered this during the Committee reports but that he left out two from Lindsay. Lindsay reported that the SCIT Scituate node is now backboned to NSHORE and that the CROWD node formerly at CENTNH is now moved to WA1WOK :NHOEM node. Lindsay also reported plans to add a backbone from SCIT to KQ1K:DENNIS and for KQ1K to link into the network and then to link to KA1RCI on Rhode Island. SNH has changed to WNDHM. Ed, K1TR sends apologies for his enthusiasm in changing the EPROMs only 15 minutes after sending out an announcement. MBOS:N1CSI may be pulled off the air when unless the 221.11 situation is worked out.

Alternates

WA2VAM asked to have Don Russ, N2CZL appointed as an alternate to Kevin. Dana seconded. Passed

Funds for Standards and Practices development

Tadd requested $50 for funding for his mailing of the printed copies of the Standards and Practices, minutes and rough drafts.

Kevin made a motion for $50 for Tadd to help fund Tadd's mailing of the Standards and Practices proof documents, as well as the draft copies of the minutes. Seconded: passed.

Alternates

W1JFP asked to have Tadd Torborg, KA2DEW appointed as an alternate to Cal. Tadd asked if he can be an alternate to Cal as well as to Rich. Kevin said that the idea is for people to have experience and rationality and surely Tadd has one of those qualities. Cal said he's trying to set Tadd up to be chairman of the next meeting. Tadd said that Potsdam is his local area and that he shouldn't be chairman of a meeting in his local area. Cal said that he didn't know about that rule. Kevin said that it's in the minutes of the meeting in Concord NY.

While indicating a small clear circular map overlay piece at the desk at which he was sitting Dana said that "We should use these little circular things at our next meeting. These are the little circles you put on the map and this is the thing that the blast and casualty calculation form. Number of dead, injured and percentages based on milli-whosits. Bomb Data: yield in megatons; with or without warning"

Cal moved that the meeting is closed.

Dana seconded
Passed
Closed at 3:58PM

—Recorded by WA2WNI
—Transcribed by KA2DEW

SERVERs Accessible From The NEDA Network

The following is a list of PBBS's that can be reached from the existing contiguous. Some paths have nodes that are not participating in any point to point dedicated linking. I have tried to provide the best path from inside the existing contiguous network. Please keep in mind that in packet radio, change is the rule (much like other branches of amateur radio).

Note: Do NOT forward 3rd party traffic long haul. It might be nice to send traffic that is destined for a PBBS direct to that PBBS but there is no reason to do long haul forwarding of bulletins and traffic that you can't route to it's final destination!

The first nodename in each connect path is a network port that is propagated. Other nodenames may be PBBS, non participating nodes or ports which are not visible outside of a local node stack.

Class 1: wireline from participating node
Class 2: direct from 220 or 440 port on a participating node
Class 3: multi hop from participating node via non 2meter links
Class 4: direct connect from 2m or HF port on participating node
Class 5: digipeater or multi-hop over 2m or HF from a participating node.

PBBS servers

call	path	class	member	node	location
n1api	chstr,berk,connct,n1dcs-2,n1api-4	3	n	n	meriden ct
kc2az	elmira,elmir2,kc2az	5	n	y	elmira ny
n1bgg	kng111,mbos,c 3 n1bgg	3	n	y	charlestown ma
kc1ce	kngstn,nshr22,chlsea,lincon,bbs1ce	3	n	n	cranston ri
k1cf	nshr22 bbs1cf	2	y	y	chelsea ma
wb2coy	clv440,bbscoy	2	y	y	poughkeepsie ny
n1dcs	chstr,berk,connct,n1dcs-2,n1dcs-4	3	n	n	new haven conn
wb1dsw	kng111,bbsdsw	1	y	y	e. kingston nh
w1eoo	chstr,berk,connct,icrc07,w1eoo-1	5	n	n	winstead ct
wa1fhb	swnh,wa1fhb	4	n	n	marlow nh
w1fyr	swnhu,w1fyr-1 (aplink + BBS)	2	y	n	gilsum nh
ka1goz	wndhm2,bbsgoz	2	y	y	nashua nh
wg1i	kngstn,nshr22,chlsea,bbswgi	3	y	y	medford ma
kq1k	kng111,scit,kq1k	2	n	n	dennis ma
k1mea	berk,k1mea-4	2	y	y	easthampton ma
ns1n	kng111,scit,ns1n	1	y	y	scituate ma
kb4n	wndhm2,bbsash	2	n	y	nashua nh
w1ny	spfld,bbswma	1	y	y	springfield ma
w1ops	berk,connct,ka1jes-12,w1ops-1	5	n	n	waterford ct
ka1pep	nshr22,ka1pep	2	n	y	lawrence ma
wa1phy	kng111,mbos,bbsphy	3	y	y	mitre arc bedford ma
kb1pj	wndhm2,kb1pj (aplink)	2	n	n	amherst nh
kc1pk	kngstn,bbspk	1	y	y	wenham ma
wa0ptv	shermn,sherm1,wb0ptv	2	n	n	Fredonia ny
wa2pvv	knd220,Net40	2	y	y	valatie ny
wb2qja	clv440,pkpsie,put,weca13,wb2qja-4	3	n	n	white plains ny
ka1rci	nshr22,medfd1,mdfd2,lincon,bbsrci	3	n	n	lincoln ri
w2rgi	crtlnd,w2rgi v w2seu-1	5	n	n	oneota ny
wa2rkn	clv440,pkpsie,bbseny	3	n	y	poughkeepsie ny
k3rli	elmira,bbsaz,elm220,k3rli v k3rli-2	3	n	n	wilkes-barre pa
wa2sna	berk,connct,kg1o-9,nnj3,wa2sna-1	5	n	n	hawthorn nj
ka1srd	wndhm1,bbssrd	4	n	y	fitchburg ma
ae1t	belnap,ae1t	4	n	n	plymouth nh
ka2tfc	frkvil,ka2tfc	4	y	n	little valley ny
ka1thm	kngstn,nshr22,chlsea,lincon,bbsthm	3	n	n	Mattapoisett ma
wa2tve	utica,bbstve	2	y	y	utica ny
k1ugm	kng111,k1ugm	2	y	n	wakefield ma
wa2umx	albny3,srtoga,wa2umx	2	y	n	saratoga ny
k1uol	forward to wb2coy or n1dcs		n	n	bethel ct
wa1wok	(see RACES/ARES/NWS)				
wb2wxq	candga,candga2,wb2wxq	2	n	n	rochester ny

DOSGate

call	path	class	member	node	location
nm1d	wndhm1,nm1d-2 (dosgate /r callbook)	4	n	n	derry nh
wb4hfn	kngstn,wb4hfn-1	4	n	n	derry nh

call	path	class	member	node	location
TCP/IP gateways/servers					
wz2b	iproch	2	y	y	Rochester NY
nq1c	ipwma	1	y	y	Springfield MA
n2gfn	ipuca	1	y	y	Utica NY
wa3ush	eriip	2	y	y	Albion (Cherry Hill) Pa
DxClusters					
k1ea	wndhm1,ycccdx,k1ea	2	y	n	harvard ma
w2hpf	monroe,rdxa,w2hjf	2	y	n	rochester ny
k2tr	knox,dxknox,k2tr	2	y	n	knox county ny (albany)
wa2tve	utica,dxclus	2	y	y	utica ny
k3tup	shermn,wpadx,k3tup	2	n	n	erie pa
kk4l	crtlnd,nybgm,kk4l	5	n	n	binghamton ny
RACES/ARES/NWS					
n2aig	sch145,n2aig-5	4	n	n	N.W.S. albany NY
wa2mjm	clv,ueoc,bbsmjm	4	n	n	Ulster Co NY EOC
kingston	ny				
wa1wok	nhoem1,bbswok	1	y	y	NHS RACES concord nh
kb2cs	nysemo,nyeoc	1	y	y	NYS RACES albany ny
Other					
wd1v	nhoem1,nhnet,wd1v (CD ROM callbook)	5	n	n	manchester.nh

<< Please report any bad information or changes to NEDA @ W1NY. Title >>
<< it "Attn.: BBS Committee". Otherwise it'll still be bad in the next issue! >>
<< A current machine readable version of this table is available for download >>
<< from the K1MEA BBS under the file section NEDA. >>

Questions from page 15

Q: Is there a way to stop the LB command in a BBS or must it continue on to the bitter end?

Some BBSs can't be stopped unless you want to disconnect. When I asked WB1DSW this question he said:

There is no way at present to halt a BBS command of any kind in mid-stream. We agree it would be nice but in checking with one of the major software developers, he said it would be very complex to implement and probably not worth the bother.

However, for your information, there is one command that you may not know about that provides a means to list bulletins selectively, thus eliminating some of the aggravation perhaps. Check out the "LC" and the "LC ;" commands as they are used in conjunction with the "L>" command. "LC" gives you a display of new bulletins since your last logon. This helps you see what's new. "LC ;" gives you a complete look at all bulletin categories as they currently exist on the system regardless of your last check in. Once you know the categories, you can selectively list the message numbers of such bulletins using the L> command. And, once you know the message numbers you then have the ability to display only the ones you are interested in. An example may help:

After logging on, I type "LC" to see the categories newly entered since my last log on. The BBS will respond with something like: ALL SALE WANT CIVDEF (The display is probably larger than this) I'm interested in the CIVDEF stuff and not at all interested in SALE items perhaps, so I type "L> CIVDEF" and the BBS responds with a display of ALL message numbers corresponding with the TO: address of CIVDEF — new ones as well as old. Once I get this list of message numbers I can use the standard "R <msg no>" command to pull off the ones I'm interested in reading. Now, let's assume that no one enters a CIVDEF message for the next couple of weeks and my next log in is two weeks from now. Doing an "LC" won't show the CIVDEF titles but "LC ;" (note the semi-colon, please) will give me the full list of bulletin TO: addresses. I can then read the messages by number similar to the above. This may be a little more work, but it can save a good deal of time and retries!

Thank you Herb. On other kinds of BBSs you might try the following: Send your control escape character. This is the character that tells your TNC that the next control character isn't to be processed. It's usually a control V or control U. Try going into converse mode and doing a control V control C. If it doesn't go back into command mode then control V is the one. Now, next time you are at a BBS and it starts sending you something you don't want, send it a control V control C <return>. What will happen is the BBS will get the control C <return> and will interpret that as a **HALT!!!** command. It will immediately go back to the command prompt. I know I've seen some BBSs do this.

If that fails just disconnect and connect back up. The BBS will dump the rest of the data into thin air and then disconnect you. If the BBS is a G8BPQ based BBS it won't even do that. It'll just stop as soon as it gets your Disconnect.

In closing

Well, that was fun. I hope we've been of help. If anybody reading this, including the submitters of these questions, want any answers, the best thing to do is ask!! Send questions to NEDA @ W1NY. In the subject put "GOOD QUESTION?". We'll try to answer all of them in the next Quarterly.

—That answer guy

Membership Roster as of 9/06/91 - 249 members

callsign	*last name*	*first*	*city*	*state*	*home BBS*	*exp mem*
NEPRA	New Englnd Packet Radio Assn		Needham	MA	WB1DSW	9204 V
NOCALL	Perry	John	Taunton	MA	-	9207 V
VE3ABG	Caberlin	Joe	Willowdale	ON	VE3OY	9205 Q
K2AE	A.R.A.	Schenectdy	Scotia	NY	WA2UMX	9201 V
N2AFP	Cannan	Frank	Livermore	NY	-	9108 V
VE1AIC	McKay	Ron	Cornwall	PEI	VE1AIC	9206 Q
N1AIU	Dawson	Earl	Enfield	CT	K1MEA	9203 Q
K2APL	Buckwalter	Stan	Briarwood	NY	K2APL	9205 Q
N1AQF	Sullivan	Jim	Woburn	MA	-	9107 Q
VE2AQI	Leslie	Jim	DDO	QU	VE2FKB	9203 Q
WZ2B	Piggot	Christpher	Rochester	NY	WB2WXQ	9202 V
N2BEB	King	Jay	Rochester	NY	WB2PSI	9205 Q
K2BEH	Wenskus	James	Rochester	NY	WB2WXQ	9207 Q
VE2BMQ	Lang	Burton	Quebec	QU	VE2FKB	9112 Q
KA2BSG	Rice	James	Rushville	NY	NONE	9207 Q
N1BTQ	Smith	Tim	Mattapoisett	MA	WA1PHY	9110 Q
N2BUL	Altpeter	Paul	Victor	NY	-	9201 Q
K1BYV	Sadowski	Edward	Coventry	RI	KA1RCI	9203 Q
NQ1C	Lafleur	Bob	Springfield	MA	W1NY	9111 V
N1CBA	Peterson	John	Augusta	ME	-	9110 Q
KB2CBZ	Welch	Louis	Chatham	NY	WA2PVV	9206 Q
VE3CDX	Garratt	Barry	Ontario	CD	-	9201 V
WA2CEB	Griffin	Dennis	Orchard Park	NY	W2OY	9111 V
N2CJ	Stampf	Charles	Lagrangville	NY	WB2COY	9204 V
N1CJD	Cui	Dan	Barrington	NH	WB1DSW	9112 Q
WB2COY	Farrell	Robert	Poughkeepsie	NY	WB2COY	9204 Q
N1CR	Barry	Bob	Nashua	NH	KB4N	9205 S
KD3CR	Kreinfeldt	Daven	Williamsport	PA	W3AVX	9208 Q
KB2CS	Abel	Jack	Albany	NY	KB2CS	9203 Q
WB3CUF	Farr	Wells	Cntrl Bridge	NY	WA2WNI	9206 V
K1CXS	Henderson	Leon	Wht Riv Jct	VT	-	9207 Q
N2CZL	Russ	Donald	Bainbridge	NY	W2RGI	9203 V
W1DA	Hitz	George	Sudbury	MA	K1UGM	9201 V
N2DAY	Baker	Raymond	Depew	NY	W2OY	9110 Q
N1DCO	Clark	Donald	W. Newbury	VT	W1FYR	9205 V
N3DDY	Timmins	William	Warren	PA	NONE	9111 Q
KA2DEW	Torborg	Tadd	Potsdam	NY	KA2JXI	9510 V
KD2DL	Baker	Brian	Depew	NY	N2CVQ	9110 Q
WA1DPP	Howarth	Robert	Lisbon	NH	WA1DPP	9111 Q
N1DQQ	Donah	Dennis	Hudson	NH	WB1DSW	9208 Q
N2DS	Schmarder	David	Beaver Dams	NY	KC2AZ	9203 V
KA2DST	Clark	Jim	N. Plainfield	NJ	KB4CYC	9110 V
WB1DSW	Salls	Herb	E. Kingston	NH	WB1DSW	9111 V
N2DU	Unverhau	David	Schenectady	NY	WA2UMX	9209 V
N5DUB	Everitt	Doug	Boulder	CO	-	9204 Q
W2DUC	Cupp	Fred	Fairport	NY	WB2WXQ	9206 Q
N4DW	Wilson	Dave	E. Burke	VT	N4DW	9204 Q
WB2DWD	Seastream	Robert	Long Valley	NJ	N2ELC	9112 Q
NR2E	Stull	Harold	Corning	NY	KC2AZ	9204 Q
K1EA	Wollf	Ken	Harvard	MA	K1EA	9208 V
VE3EBT	Tilley	David	Lancaster	ON	NONE	9401 Q
VE3EJ	Sluymer	John	Grassie	ON	-	9201 Q
WA2ENW	Elliott	Edward	Shortsville	NY	-	9201 Q
N3ET	Lilly	Randy	Allentown	PA	N3ET	9307 V
KC3ET	Gessner	Charles	West Mifflin	PA	KA3VNP	9208 Q
N1EZD	Donaldson	Fred F	Templeton	MA	N1EZD	9204 V
NZ1F	Lundholm	Don	Durham	NH	WB1DSW	9107 S
KY2F	Swiatlowski	Fred	Oswego	NY	-	9205 Q
WA1FBI	Bassett	Doug	Greenfield	MA	K1MEA	9112 Q
N1FCC	Taylor	Dave	Belchertown	MA	W1NY	9111 V
W1FEW	Brown	Richard	Windham	NH	KB4N	9203 S

callsign	*last name*	*first*	*city*	*state*	*home BBS*	*exp mem*
N1FGY	Grosso	Ed	New Ashford	MA	WA2UMX	9112 Q
N1FIL	St.Jean	Richard	Manchester	NH	WA1WOK	9208 V
N1FMB	Lees	Ralph	Westfield	MA	W1NY	9207 V
W2FMM	Ward	James	Nichols	NY	WF2A	9205 Q
N2FQA	Pease	Dudley	Rochester	NY	-	9205 Q
WA2FQA	Friedman	Jerrold	Spencer	NY	WF2A	9111 Q
N1FSF	Woering	Harold	Easthampton	MA	K1MEA	9209 Q
N1FWR	Barry	Chris	Chicopee	MA	K1MEA	9204 S
W1FYR	Merrill	Alan	Gilsum	NH	W1FYR	9206 V
KC1FZ	Davis	George	Hingham	MA	NS1N	9112 Q
KB2FZQ	Koopman	William	Glens Falls	NY	WA2UMX	9107 S
NM3G	Leuthold	Brian	Waterford	PA	NM3G	9111 Q
N1GBE	Celone	Ralph	Thomaston	CT	N1DCS	9203 Q
N2GDE	Hansen	Bob	Elmira	NY	KC2AZ	9202 V
N2GDV	Niebuhr	Art	Lockwood	NY	KC2AZ	9204 Q
KB2GLO	Kenney	Thomas	Toms River	NJ	NN2Z	9112 Q
N1GMC	Cooley	Dr.Edmond	Etna	NH	W1FYR	9111 Q
W6GO	Obrien	Jay	Reo Linda	CA	-	9112 Q
KA1GOZ	Dillaby	Donald	Nashua	NH	KA1GOZ	9202 Q
N1GUJ	Ferguson	Peter	Granby	MA	W1NY	9108 Q
NP2H	Ovad	David	Blairstown	NJ	N2ELC	9110 V
N1HFF	Swanburg	Lloyd	Atkinson	NH	WB1DSW	9108 Q
WB4HFN	Baker	Ron	Derry	NH	WB1DSW	9206 Q
KC1HH	Merril	Robert	Goffstown	NH	WB1DSW	9303 Q
VE3HI	Lampert	Murray	Willowdale	ON	VE3HI	9207 V
W1HJF	Rappaport	Larry	Colebrook	NH	-	9202 Q
WA1HJR	Leach	Leonard	Hudson	NH	KA1GOZ	9204 Q
N1HKK	Csernelabics	Nick	Portsmouth	NH	WB1DSW	9111 Q
KB2HNJ	Karpinsky	Chris	Otego	NY	W2RGI	9203 Q
K2HNW	Goble	Alfred	Schenectady	NY	WA2UMX	9201 Q
N1HPL	Robinson	Scott	Tyngsboro	MA	WA1PHY	9107 V
N1HPN	Holmer	Jan	Acton	MA	-	9108 S
KB5HPN	Gorman	John	Vestal	NY	WF2A	9204 Q
KB2HPU	Brayman	Peter	Unadilla	NY	W2RGI	9205 Q
N1HSM	Graziano	Stan	Portsmouth	NH	WB1DSW	9111 Q
KC1I	George	Larry	Sanford	ME	WB1DSW	9203 Q
KK2I	Oldenburg	Todd	Tonawanda	NY	-	9112 V
W3IAG	Heavener	Robert	Erie	PA	NM3G	9111 Q
K1IDF	Scott	Donald	Sunderland	MA	-	9206 Q
W2IH	Hathaway	Ike	Syracuse	NY	WA2TVE	9204 V
N2IJM	Phillips	Phil	Geneva	NY	WB2WXQ	9201 Q
W2IMK	Centanni	Jim	Fairport	NY	WB2WXQ	9205 Q
N1IOF	Siegel	Shep	Derry	NH	N1GAL	9205 V
N2IRZ	Rotolo	Don	RiverDale	NJ	KD6TH	9205 V
W2IRZ	Preston	Mae	Massena	NY	KA2JXI	9111 Q
N2ITR	Fernandez	Manuel	Ogdensburg	NY	KA2JXI	9111 Q
N2IUL	Syvertsen	Einar	Albany	NY	WA2UMX	9201 Q
N1IUP	Read	Harold	Berlin	MA	-	9205 V
KC2IV	Phillips	Bob	Midl Grove	NY	WA2UMX	9203 Q
WB3IWY	Engman	Gerald	Warren	PA	KA3SFC	9111 Q
NM2J	Oliver	Mark	W. Henrietta	NY	WB2WXQ	9209 V
NV2J	Volino	Anthony	Elmira	NY	-	9207 Q
N2JAW	Raposo	Ron	Holland Ptnt	NY	WA2TVE	9207 Q
W1JFP	Stiles	Calvin	Hanover	NH	W1FYR	9301 V
N2JHJ	Svalland	Eric	Kingston	NY	WB2COY	9203 V
N2JJV	King	Kenneth	Cobleskill	NY	-	9205 Q
WB2JLR	Place	Richard	Canandigua	NY	WB2WXQ	9302 V
WA2JOC	Dickerson	William	Danville	PA	NR3U	9207 Q
KA2JXI	Ousterhout	Roger	Ogdensburg	NY	KA2JXI	9110 Q
W1JY	Johnson	O.W.H.	Bristol	NH	WA1FHB	9202 S
N2JYG	Werren	Franklin	Sherman	NY	WA0PTV	9205 V
WN2K	Radio.Club	Unatego	Otego	NY	W2RGI	9112 Q
N2KNV	Jansen	Lew	Ithaca	NY	KC2AZ	9111 Q

Continued on Page 46

Roster from page 45

callsign	*last name*	*first*	*city*	*state*	*home BBS*	*exp mem*
N2KOP	Perkins	Clint	Ithaca	NY	-	9203 Q
N2KPR	Kennedy	Terry	Milford	NY	W2RGI	9204 V
KB2KRB	Savini	Paul	Amherst	NY	W2SEX	9204 Q
KZ2L	Coyne	Ken	Pine Island	NY	WA2RKN	9207 Q
KK4L	Dresser	Ken	Johnson City	NY	KK4L	9205 V
G8LCK	Reynolds	Lee	Greenville	NH	KB4N	9202 Q
K1LEC	Aldrich	Roland	Springfield	VT	WA1WOK	9112 Q
N2LIB	Reynolds	George	Penfield	NJ	NONE	9111 Q
K2LSX	Gubernard	John	Bergenfield	NJ	N2IMC	9206 Q
K1LT	Kean	Victor	Columbus	OH	W8CQK	9107 Q
K8LT	Grebus	Gary	Brookline	NH	WA1PHY	9112 Q
W1LTC	Nobrega	Julio	Burlington	MA	-	9111 Q
N2LTI	Gauvin	Hervey	Penfield	NY	NONE	9203 Q
KC3LV	Seppala	E.J.	Fairview	PA	NM3G	9203 Q
WA3LWR	Chimel	Robert	Clarks Sumit	PA	K3RLI	9202 Q
WB8LYJ	Townsend	Joseph	Painesville	OH	WA8BXN	9107 Q
K3LZ	Zuckerman	Larry	Easton	PA	-	9107 Q
KY1M	Howe	Dexter	Bradford	NH	WA1WOK	9203 V
N2MAH	Gehret	Reg	Bath	NY	KC2AZ	9205 Q
K1MEA	Wzorek	James	Easthmapton	MA	K1MEA	9111 V
KA1MF	Hughes	Don	Harvard	MA	WA1PHY	9112 Q
N2MGI	Parker	Mat	Colton	NY	WB2JXI	9203 V
KC1MJ	Blowney	John	York Harbor	ME	WB1DSW	9111 Q
KA1MLN	Jolda	Joseph	Webster	MA	K1MUJ	9111 Q
WA2MNM	Fedder	William	Sanbron	NY	UNK	9212 Q
WB2MTJ	Baker	Jim	West Monroe	NY	-	9108 Q
VE3MX	Kramer	Ron	Port Colborn	ON	VE3SNP	9205 V
KA2MYD	Mathewson	Thomas	Norwich	NY	KA2MYD	9108 V
WA2MZF	Prentice	James	Canton	NY	KA2JXI	9111 S
NR1N	Collins	Lindsay	Washington	NH	WA1WOK	9212 V
NS1N	Johnson	Karl	Scituate	MA	NS1N	9201 Q
KF2N	Dietrich	Harry	Elmira	NY	KC2AZ	9204 Q
W4NBC	Smith	Earl	York	ME	WB1DSW	9204 Q
N0NDO	Painter	John	Federal Way	WA	-	9204 V
W1NMQ	Boudreau	Joseph	Fiskdale	MA	W1BIM	9203 V
VE3NUU	Meth	Eric	Monkland	ON	VE3NUU	9111 V
WB2NVR	Schaps	Robert	Scarsdale	NY	WB2QJA	9204 Q
K1WNZ	Stuart	David	Dover	NH	WB1DSW	9111 V
KA1NZA	Handley	Eric	N. Clarendon	VT	KA1NZA	9110 Q
WJ2O	Farnsworth	Dave	McConlesvill	NY	-	9207 V
AD3O	Voorhees	Denny	Savre	PA	KC2AZ	9204 V
NX9O	McCarthy	Brian	Vestal	NY	WF2A	9302 V
KA3ODJ	Horn	Andy	Bangor	PA	N3ET	9108 Q
KA2OMQ	Calvete	Thomas	Rochester	NY	WB2WXQ	9107 S
KC1OR	Gero	Roy	Springfield	MA	K1MEA	9204 Q
KA1OU	Eddy	Chan	Concord	NH	WA1WOK	9205 V
KB1OZ	Sinclair	Ronald	Epping	NH	WB1DSW	9207 V
NG2P	Hunter	Bob	Rochester	NY	WB2WXQ	9205 V
NX2P	Slack	Bill	Sparta	NJ	N2ELC	9205 V
W1PEX	MacDonald	Dan	Nashua	NH	KB4N	9208 Q
KA3PGW	Weirbach	Ken	Bethleham	PA	-	9107 Q
KC1PK	Ames	Thomas	Beverly Frms	MA	WB1DSW	9201 V
WA1PTC	Staines	Michael	Rochester	NH	KA1NNN	9205 V
WB2PTX	Castellano	Cosmo	New Hartford	NY	WA2TVE	9108 Q
WB8PUF	Burningham	John	Mahopag	NY	-	9204 V
VE2PWI	West.Is	A.R.C.	Dorval	QU	VE2FKB	9203 Q
NK1Q	Cedrone	Jim	S.Boston	MA	K1UGM	9206 V
WB2QBQ	Seger	Robert	Altamont	NY	WA2UMX	9204 V
KA1QP	Chauvin	Paul	Manchester	NH	WA1WOK	9201 Q
KA2QYE	Frisone	Frank	Schenectady	NY	-	9207 Q
KD1R	Stetson	Ralph	Westford	VT	KD1R	9202 Q
W1RFP	Pratt	Blanchard	Norwich	VT	W1FYR	9108 Q

callsign	*last name*	*first*	*city*	*state*	*home BBS*	*exp mem*
VE3RM	Dashney	Don	LOrignal	ON	VE2FKB	9203 Q
W1RNZ	Stearns	Gordon	N. Sprgfield	VT	WA1FHB	9201 Q
WB2RRW	Simons	James	Houghton	NY	KA2TFC	9205 V
K1RSC	Johnston	John	Rye	NH	WB1DSW	9206 Q
WA2RZG	White	Jack	Scottsville	NY	WB2WXQ	9207 Q
NU1S	Bernard	Doehner	Grafton	MA	WA1PHY	9206 Q
KA3SFC	Ellsworth	Lloyd	Warren	PA	KA3SFC	9111 V
KA1SIE	Garon	Chris	Nahsua	NH	KA1GOZ	9204 Q
K4SJ	Anderson	Philip	Perry	NY	WB2WXQ	9205 Q
WA2SOK	Walter	Irv	Palmyra	NY	WA2WXQ	9111 V
WA3T	Moseley	Robin	Allentown	PA	-	9110 Q
KA1TDL	Warren	Schley	Chicopee	MA	K1MEA	9204 Q
KA8TEF	Frazier	Phil	Republic	OH	N8FIS	9111 Q
KA2TFC	Montgomery	John	Little.Vally	NY	KA2TFC	9111 V
KA1THM	Vangel	Mathew	Mattapoisete	MA	KA1THM	9107 Q
WA1THQ	Garrison	Karen	Durham	NH	WB1DSW	9206 Q
WA1TLN	McAllister	Russell	Lebanon	NH	WA1FHB	9202 Q
DK1TM	Malner	Juergen	Westfield	MA	NONE	9203 Q
KB2TM	Baumgarte	Dennis	Port Jerus	NY	KA2MSL	9207 V
N2KTM	Faux	Dr. James	Brockport	NY	-	9201 V
K2TNN	Batik	Jerome	Stamford	NY	W2RGI	9206 Q
KE2TP	Perley	Don	Troy	NY	WA2UMX	9112 V
K1TR	Parsons	Ed	Windham	NH	KA1PEP	9201 Q
WA2TVE	Cohen	Howie	Utica	NY	WA2TVE	9112 V
WM1U	Hook	Derek	Roxbury	CT	-	9207 Q
N2UA	Varga	Thomas	Methuen	MA	KA1MGO	9202 Q
K1UAQ	Sencabaugh	William	Littleton	NH	K1UAQ	9202 Q
W1UBG	King	Robert	Dover	NH	WB1DSW	9202 V
KA1UDX	Bogdan	Rick	Hull	MA	NS1N	9107 Q
KA1UDX	Bogdan	Rick	Hull	MA	NS1N	9209 Q
K1UGM	Morris	Jim	Wakefield	MA	K1UGM	9111 V
WA2UKX	Reiter	William	Pen Yan	NY	WB2WXQ	9205 Q
WA2UMH	McKnight	Jim	Schuylervile	NY	WA2UMX	9202 V
K2UOB	Weiman	Don	Almond	NY	-	9107 V
N4UTO	Mazquiaran	Michael	Miami	FL	N4UTO	9207 V
KB7UV	Funk	Andrew	Astoria	NY	KD6TH	9204 Q
N2EUW	Clark	Albert	Phoenix	NY	NONE	9202 Q
WD1V	Seney	John	Manchester	NH	KB4N	9203 Q
WA2VAM	Wright	Kevin	E. Freetown	NY	W2RGI	9302 V
WA2VEZ	Scanandoah	Alan	Rochester	NY	WB2WXQ	9205 Q
W1VGZ	Dimilla Jr	Thomas	Saugus	MA	K1UGM	9201 Q
WB2VPH	Lievense	Richard	Brockport	NY	-	9204 Q
KC2VS	Reichert	Leigh	Williamsvill	NY	-	9111 Q
AI2W	Dombert	Ed	Hornell	NY	KC2AZ	9208 Q
KV2W	White	James	Hammondsport	NY	WB2GZE	9107 Q
WB2WHD	Whelan	Daniel	Delanson	NY	WA2UMX	9207 V
KA1WHE	Douillard	Ronald	Chicopee	MA	K1MEA	9110 V
KA1WHV	Britton	Mike	Mill River	MA	NONE	9203 V
WA2WNI	Jonas	Dana	Valatie	NY	WA2PVV	9211 V
WB7WOG	Neff	Neal	Stoneham	MA	K1UGM	9107 Q
WA1WOK	Calvitto	Cal	Concord	NH	WA1WOK	9204 V
KA2WPT	Stinner	Theodore	Holland	NY	KA2MZC	9205 Q
VE3XO	Tobe	Steve	Toronto	ON	NONE	9207 Q
N2KXS	Stonehill	Judith	Honeoye Fls	NY	-	9205 V
WK1Y	Boyle	Joseph	E. Rochester	NH	-	9209 Q
K1YHR	Packard	David	Pennellville	NY	-	9107 V
KB2YJ	Zanghi	Gary	Angola	NY	WA0PTV	9205 V
WA3YML	McCambridge	Michael	Moscow	PA	K3RLI	9204 Q
KB7YW	Peachman	Fred	Brookfield	OH	WA8LVP	9205 Q
KA0ZCY	Khoury	John	Utica	NY	WA2TVE	9201 V
K1ZDS	Sonsoucie	Barry	Dover	NH	WB1DSW	9203 Q
KA2ZMC	Sumski	Paul	Arcade	NY	-	9108 Q
WB2ZUF	McCoy	Glenn	Nichols	NY	WB2ZUF	9204 Q

Membership Roster prepared by WB1DSW — Membership Director

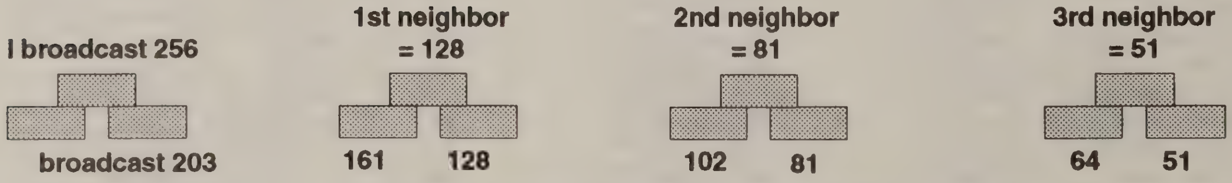
TheNET Sysop's Help Sheet

Parameter Function v1.1 & 1.16		LAN[1]	Bkbn	U/G
1	Destination List Length	100	100	100
2	Minimum Quality For Auto Update1	50	50	50
3	HDLC Channel Quality	0	202	50
4	RS-232 Channel Quality	203	203	203
5	Obsolescence Count Init Value	3	3	3
6	Obsolescence Count Min For Broadcast	4	1	4
7	Nodes Broadcast Interval (sec)	1800	1800	1800
8	Time-to-live Initializer (hops)	7	1	7
9	Transport Timeout (sec)	200	200	200
10	Transport RETRIES	2	2	2
11	Transport ACK Delay (sec)	1	1	1
12	Transport Busy Delay (sec)	180	180	180
13	Transport Window Size	2	2	2
14	Congestion Control Threshold	4	4	4
15	No-Activity Timeout (sec)	7200	300	7200
16	P-persistance (see text)	128	255	64
17	Slot Time (10ms)	20	1	20
18	FRACK (sec)	4	1	9
19	MAXframe	1	1	1
20	Link RETRIES	10	10	10
21	Link RESPTIME [t2 timeout] (10ms)	50	20	50
22	Link T3 Timeout [CHECK] (10ms)	65000	65000	65000
23	Digipeating 0=no; 1=yes	0	0	0
24	Validate Callsigns 0=no; 1=yes	1	1	0
25	Station ID 0=msgs;1=after; 2=always	1	0	1
26	CQ Broadcasts 0=no; 1=yes	1	0	1

Parameter Function v2.08		LAN	Bkbn	U/G
1	Minimum Quality For Auto Update1	50	50	50
2	HDLC Channel Quality	0	202	50
3	RS-232 Channel Quality	203	203	203
4	Obsolescence Count Init Value	3	3	3
5	Obsolescence Count Min For Broadcast	4	1	4
6	Nodes Broadcast Interval (sec)	1800	1800	1800
7	FRACK (sec)	4	1	9
8	MAXframe	1	1	1
9	Link RETRIES	10	10	10
10	Digipeating 0=no; 1=yes	0	0	0
11	Validate Callsigns 0=no; 1=yes	1	1	0
12	Host Mode Connects	0	0	0
13	TxDELAY (10ms)	35	35	35
14	Broadcast Via Port b0=radio; b1=RS-232	2	3	3
15	Pound Node Propagate 0=no; 1=yes	0	0	0
16	Connect Command Enable 0=no; 1=yes	1	0	1
EPROM parameters				
17	Destination List Length	100	100	100
18	Time-to-live Initializer (hops)	7	1	7
19	Transport Timeout (sec)	200	200	200
20	Transport RETRIES	2	2	2
21	Transport ACK Delay (sec)	1	1	1
22	Transport Busy Delay (sec)	180	180	180
23	Transport Window Size	2	2	2
24	Congestion Control Threshold	4	4	4
25	No-Activity Timeout (sec)	7200	300	7200
26	P-persistance (see text)	128	255	64
27	Slot Time (10ms)	20	1	20
29	Link RESPTIME [t2 timeout] (10ms)	50	20	50
30	Link T3 Timeout [CHECK] (10ms)	65000	65000	65000
31	Station ID 0=msgs;1=after; 2=always	1	0	1
32	CQ Broadcasts 0=no; 1=yes	1	0	1
33	Heard List Length	20	20	20
34	Full Duplex 0=no; 1=yes	0	0	0

This node:	256, 203
2nd node:	161, 128
3rd node:	102, 81
4th node:	64, 51
5th node:	40, 32
6th node:	25, 20
7th node:	16, 13
8th node:	10, 8

—KA2DEW



This drawing represents the node quality value for a single node as it propagates through several node hops.

Notes:

A LAN port is a port that is on a frequency which has no other nodes nor any servers. The port would be used by stations who mostly aquire data *from* the network. These parms would be incompatible with a crowded channel.

U/G indicates a port on a frequency which would be used by users and/or servers and/or other nodes. This includes LAN frequencies which have, since creation, have aquired KAnodes, digipeaters and/or other nodes and servers.

Bkbn indicates a port that talks to a single other node which is similarly configured.

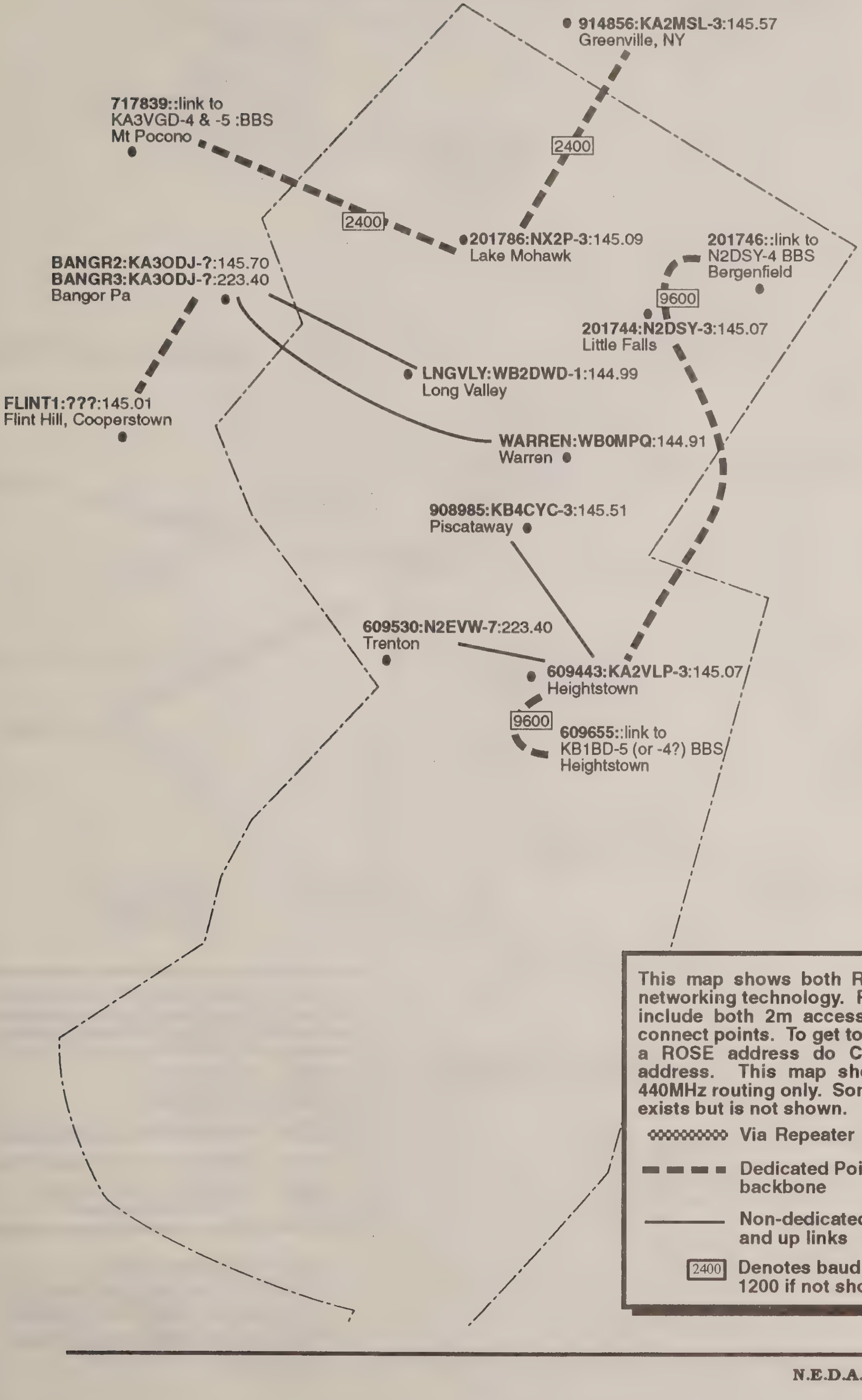
Please read the minutes. This information is preliminary and should not be implemented except for testing until the launch date. Keep an eye on the local BBS or contact W1JFP @W1JFP.NH or WA2WNI @WA2PVV.

This information is presented here at this time because it is probably very close to the final configuration for this change and this is the most convenient time/medium for this information. When you receive the final information, please make changes on this sheet to avoid confusion. If you have input on any of this information please send it to NEDA @ W1NY attn TECH. **—Editor**

This information is preliminary. Keep an eye out on your local BBS for updated information. Read the *Network Changes* article in this Quarterly.

North East Digital Association

Northern NJ user port/services map
rev 1.00 9/19/91



This map shows both ROSE and TheNET networking technology. ROSE ports shown include both 2m access points and BBS connect points. To get to a BBS as listed at a ROSE address do C *bbscall*, *localdigi*, address. This map shows 50, 220, and 440MHz routing only. Some 144MHz routing exists but is not shown.

∞∞∞∞∞∞ Via Repeater

▬ ▬ ▬ ▬ Dedicated Point To Point backbone

——— Non-dedicated 50MHz or 220Mhz and up links

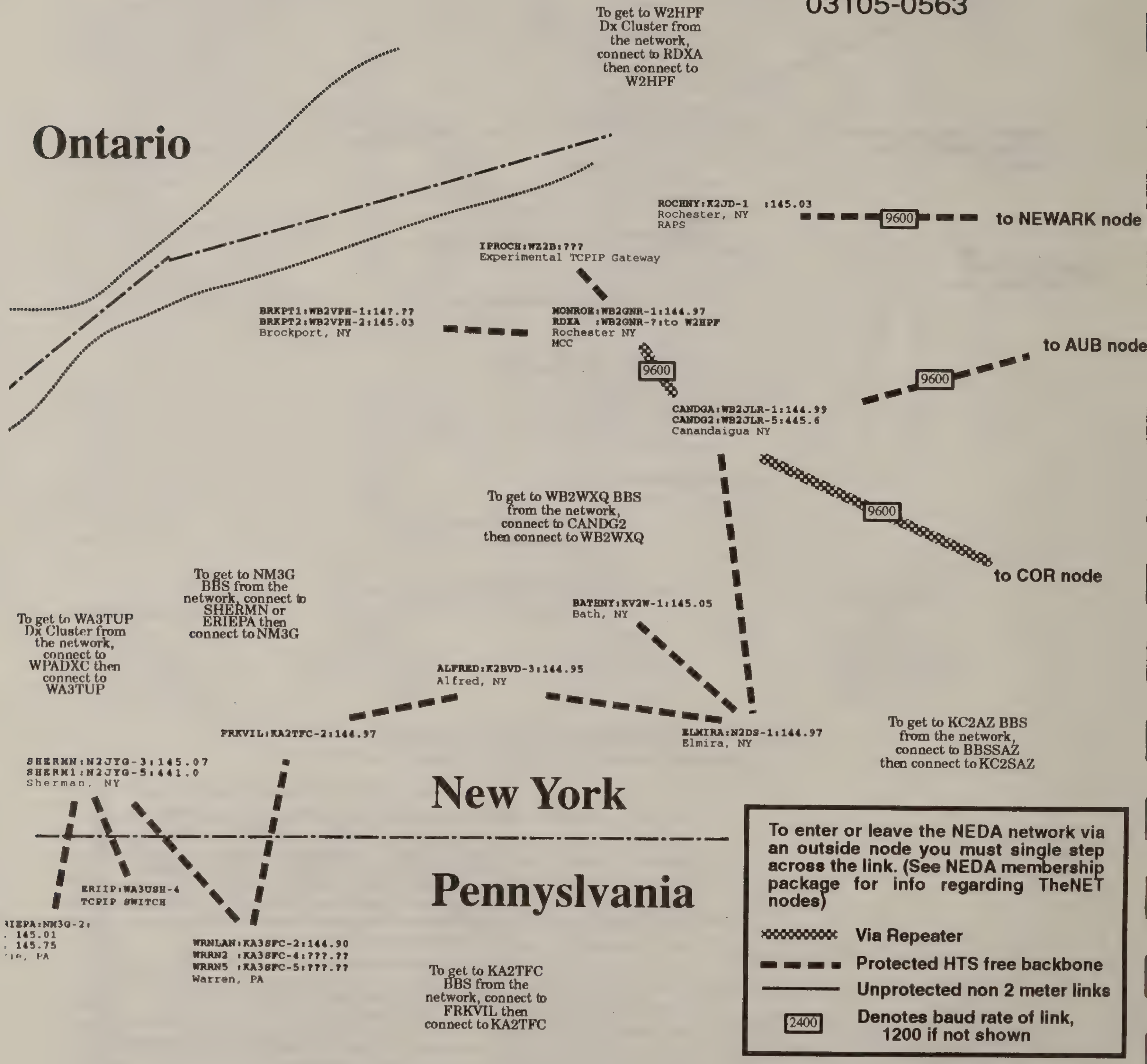
2400 Denotes baud rate of link, 1200 if not shown

North East Digital Association

Western New York Region **user** port map

rev 1.34 9/4/91

NEDA
Box 563
Manchester, NH
03105-0563


To get to W2HPF Dx Cluster from the network, connect to RDXA then connect to W2HPF

To get to WB2WXQ BBS from the network, connect to CANDG2 then connect to WB2WXQ

To get to NM3G BBS from the network, connect to SHERMN or ERIEPA then connect to NM3G

To get to WA3TUP Dx Cluster from the network, connect to WPADXC then connect to WA3TUP

To get to KC2AZ BBS from the network, connect to BBSSAZ then connect to KC2SAZ

To get to KA2TFC BBS from the network, connect to FRKVIL then connect to KA2TFC

To enter or leave the NEDA network via an outside node you must single step across the link. (See NEDA membership package for info regarding TheNET nodes)

▨▨▨ Via Repeater
▬ ▬ ▬ Protected HTS free backbone
—— Unprotected non 2 meter links
2400 Denotes baud rate of link, 1200 if not shown

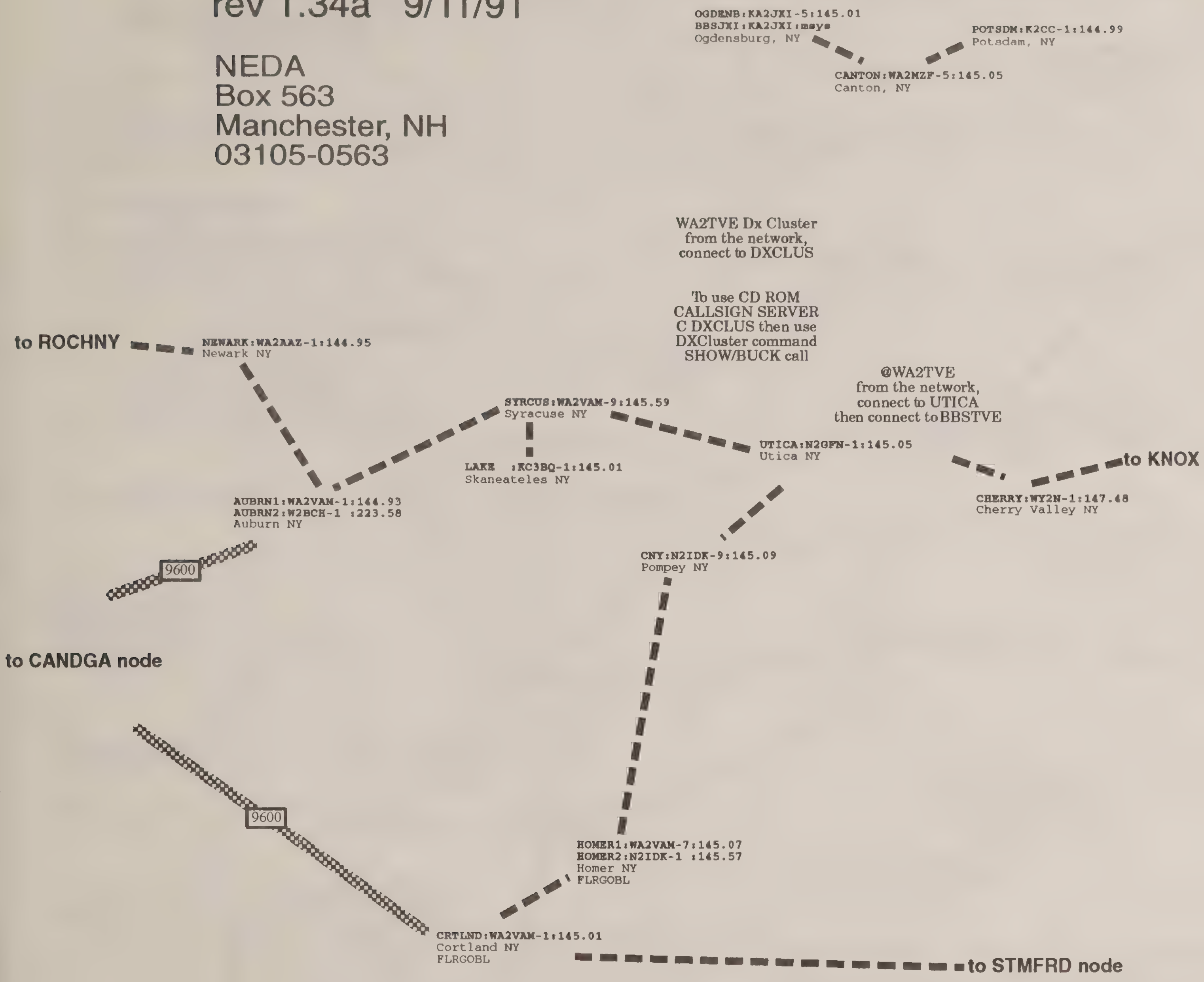
Network nodes are:
BRKPT CANDGA MONROE
ELMIRA ALFRED ROCHNY
FRKVIL WARREN SHERMN
ERIEPA

North East Digital Association

Central New York Region user port map

rev 1.34a 9/11/91

NEDA
Box 563
Manchester, NH
03105-0563



Network nodes are:
NEWARK AUB SYR HOM
COR LAKE CNY UTICA
OGDENB CANTON POTSDM

To enter or leave the NEDA network via an outside node you must single step across the link. (See NEDA membership package for info regarding TheNET nodes)

▨ Via Repeater

▬ ▬ ▬ Protected HTS free backbone

— Unprotected non 2 meter links

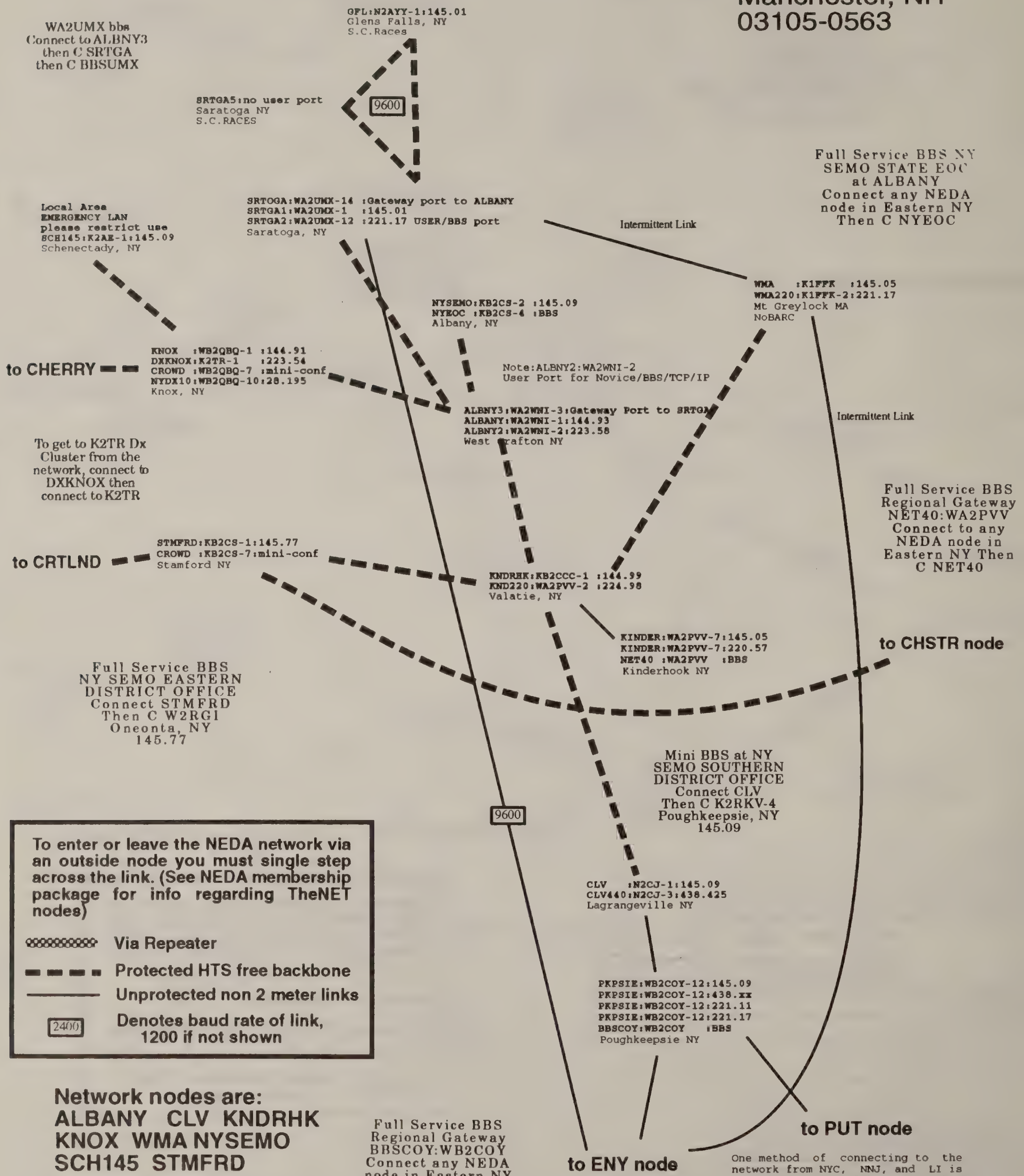
2400 Denotes baud rate of link, 1200 if not shown

North East Digital Association

Eastern New York Region **user** port map

rev 1.34 9/4/91

NEDA
Box 563
Manchester, NH
03105-0563



WA2UMX bbs
Connect to ALBNY3
then C SRTGA
then C BBSUMX

Full Service BBS NY
SEMO STATE EOC
at ALBANY
Connect any NEDA
node in Eastern NY
Then C NYEOC

To get to K2TR Dx
Cluster from the
network, connect to
DXKNOX then
connect to K2TR

Full Service BBS
Regional Gateway
NET40:WA2PVV
Connect to any
NEDA node in
Eastern NY Then
C NET40

Full Service BBS
NY SEMO EASTERN
DISTRICT OFFICE
Connect STMFRD
Then C W2RG1
Oneonta, NY
145.77

Mini BBS at NY
SEMO SOUTHERN
DISTRICT OFFICE
Connect CLV
Then C K2RKV-4
Poughkeepsie, NY
145.09

To enter or leave the NEDA network via an outside node you must single step across the link. (See NEDA membership package for info regarding TheNET nodes)

▨▨▨▨	Via Repeater
▬ ▬ ▬	Protected HTS free backbone
──	Unprotected non 2 meter links
2400	Denotes baud rate of link, 1200 if not shown

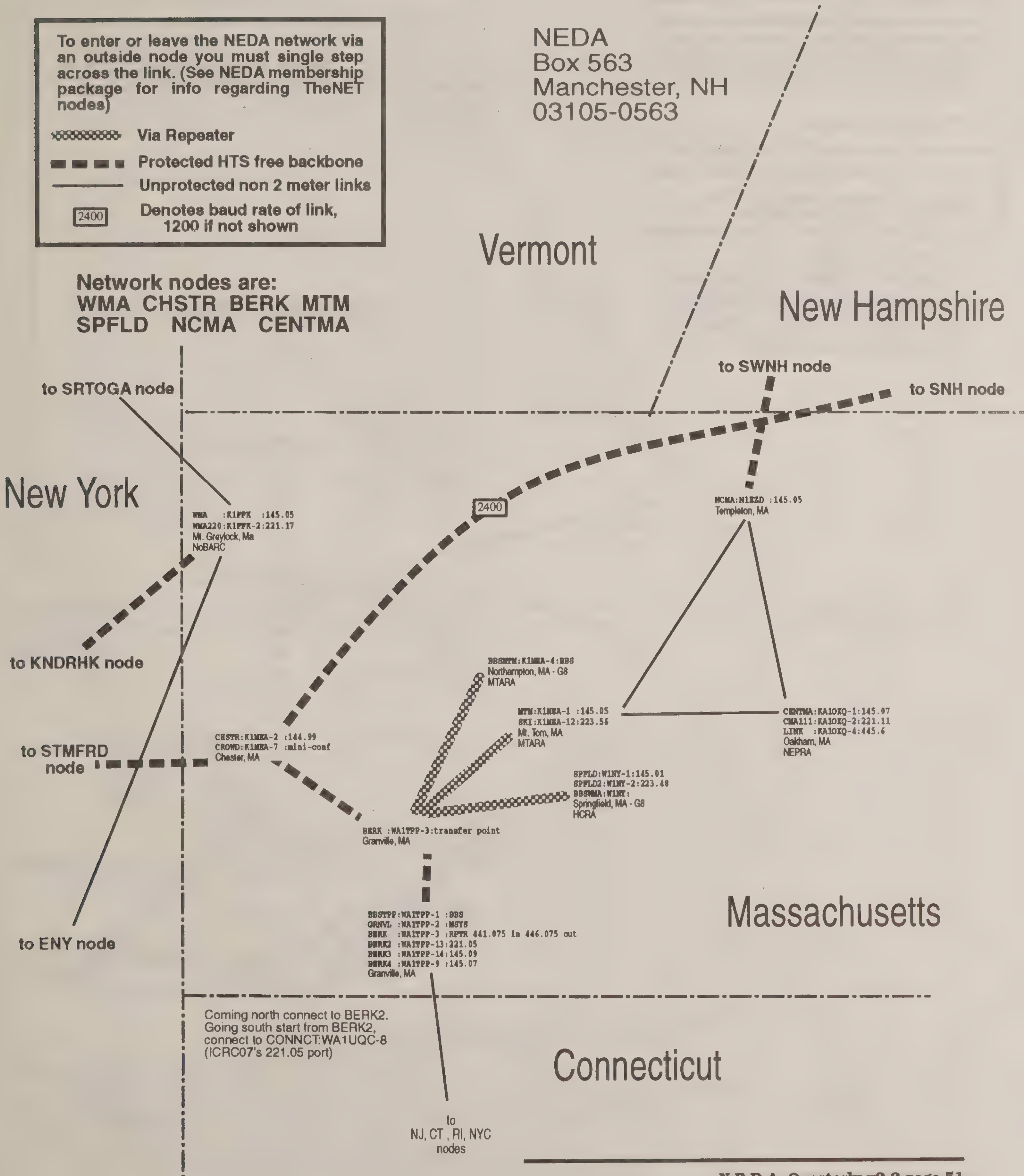
Network nodes are:
ALBANY CLV KNDRHK
KNOX WMA NYSEMO
SCH145 STMFRD

Full Service BBS
Regional Gateway
BBSCOY:WB2COY
Connect any NEDA
node in Eastern NY
Then C BBSCOY

One method of connecting to the network from NYC, NNJ, and LI is to find N1DCS-2:haven, then connect to PUT, then PKPSIE, then CLV440. This allows a station to get into the network without going over 2 meters (2 meter hops cause serious problems in reliability). Most nodes in NNJ and NYC know about N1DCS-2:haven.

North East Digital Association

VT/Western Mass/CT **user** port map
rev 1.33 9/4/91



To enter or leave the NEDA network via an outside node you must single step across the link. (See NEDA membership package for info regarding TheNET nodes)

NEDA
Box 563
Manchester, NH
03105-0563

Network nodes are:
WMA CHSTR BERK MTM
SPFLD NCMA CENTMA

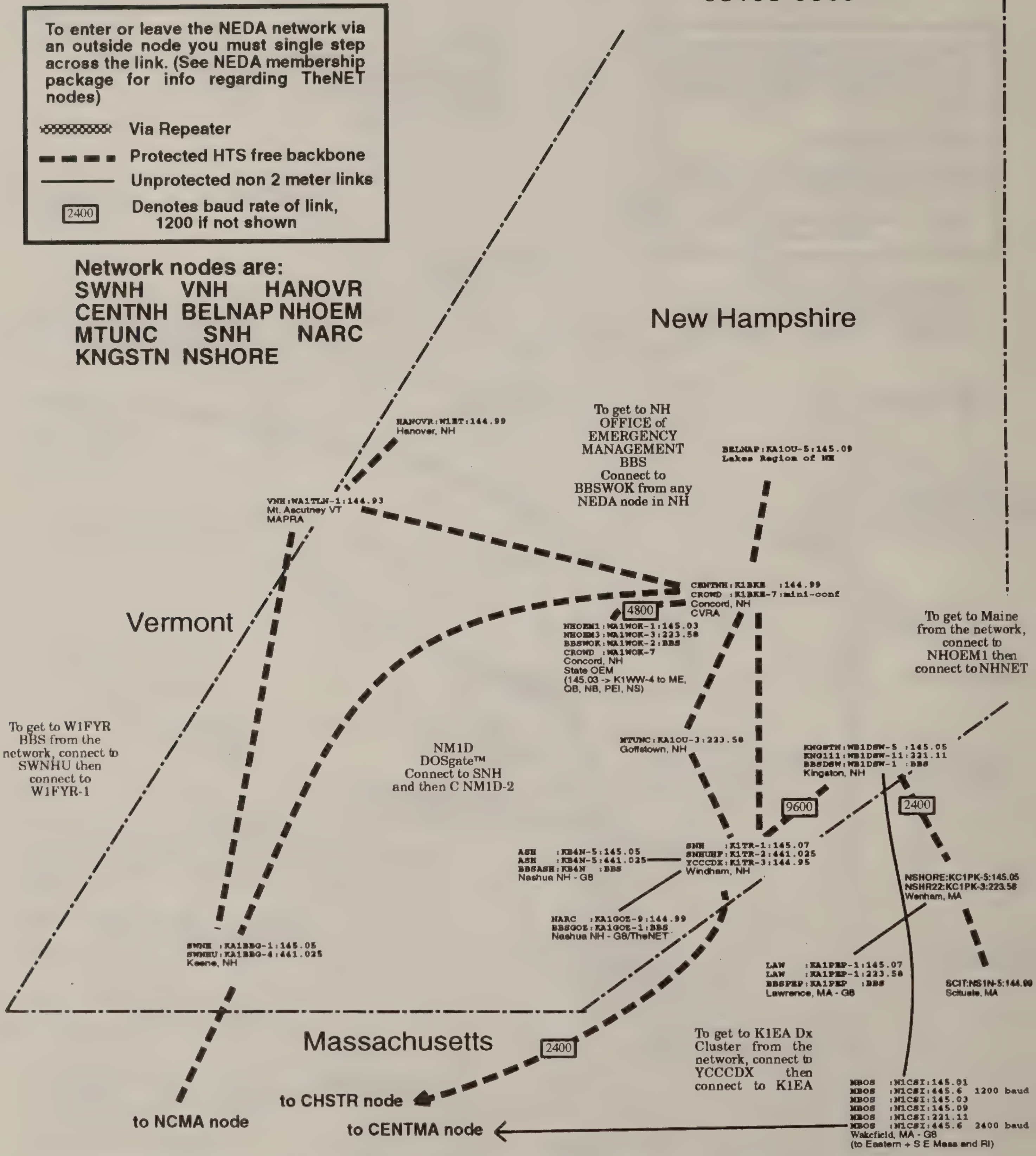
Coming north connect to BERK2.
Going south start from BERK2,
connect to CONNCT:WA1UQC-8
(ICRC07's 221.05 port)

North East Digital Association

New Hampshire **user port map**

rev 1.32 9/4/91

NEDA
Box 563
Manchester, NH
03105-0563



To enter or leave the NEDA network via an outside node you must single step across the link. (See NEDA membership package for info regarding TheNET nodes)

- ▨ Via Repeater
- ▬ ▬ ▬ Protected HTS free backbone
- ── Unprotected non 2 meter links
- 2400 Denotes baud rate of link, 1200 if not shown

Network nodes are:
SWNH VNH HANOVR
CENTNH BELNAP NHOEM
MTUNC SNH NARC
KNGSTN NSHORE

To get to NH OFFICE of EMERGENCY MANAGEMENT BBS Connect to BBSWOK from any NEDA node in NH

To get to Maine from the network, connect to NHOEM1 then connect to NHNET

To get to W1FYR BBS from the network, connect to SWNHU then connect to W1FYR-1

NM1D DOSgate™ Connect to SNH and then C NM1D-2

To get to K1EA Dx Cluster from the network, connect to YCCCDX then connect to K1EA

NEDA HexiPus™ Order Form

Use this order form when purchasing HexiPus™ board kits by mail from the POBox or from a NEDA consignee at a special event.

Use the latest version of this form if possible. See bottom of the page for release date.

You do not have to pay shipping if you are getting the HexiPus™ from a NEDA agent/consignee.

To Consignee: Please make sure that each purchase is handled with one of these forms. Correctly document funds exchanged, check numbers, purchaser's name and address if not by cash; and quantities of each kit type delivered.

To Mail Purchaser: Please fill out all sections of the form except those marked "For Office Use Only".

This will help our treasurer track the sales of the product so that our club may be run efficiently and above board.

Thank you and good luck with your node!

Purchaser Information

Name

Address

City State/Province

Country Zip

Callsign (Optional) Date Purchased

✔Cash ☐ Check Number ✔US bank ☐ ✔Canadian ☐

Amount ↓

If funds are Canadian compute exchange rate as best you can. If check is drawn on a Canadian bank add $5 U.S. to total.

# of Board+Diode Kits (US) x$22.95	+	# of Complete Kits (US) x$29.95

subtotal in US funds:

If by mail add $4.00 per unit
No mail delivery outside U.S.

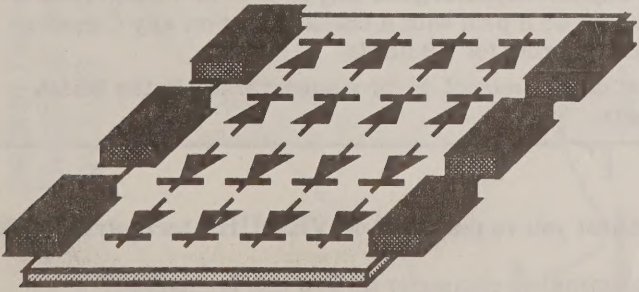
Total in US funds:

Agent/Consignee Information

Name

Event

Notes: (specify connector type, male/female)



The NEDA HexiPus™ Kit is, as of this printing, available in three formats. Board with diodes; Board with diodes and female connectors; or board with diodes and male connectors. The supply of the female connectors is limited as they were purchased surplus. Please specify in the notes section above your preference. The shipper will give you male connectors if females run out.

Funds for the sale of HexiPus™ boards go to NEDA. NEDA is a non-profit club.

For Office Use Only (Treasurer)

Date Rx by Treasurer: **Date Tx to HexiPus™ Cmty** **Deposit**

Order Form Date: 09/16/91

North East Digital Association Membership

Welcome to packet networking. This is the official membership application form for N.E.D.A.

Some General Stuff About N.E.D.A.:

N.E.D.A. was founded on Sept. 17, 1989. N.E.D.A. holds 5 scheduled yearly meetings including four board of directors meetings announced one month in advance and one general meeting each fall in a central location to be announced at the previous board meeting. The general meeting is open to all. The board of directors meeting is open to voting members only, all of whom are invited via packet mail @ their Home BBS.

Club funds may only be allocated at the board meetings, the minutes of which are printed in the NEDA Quarterly.

The board of directors consists of 6 hams who are elected for 2 year terms by the voting membership. The board of directors appoints an editor, chairperson to the general meeting, treasurer plus any additional department heads as they see fit.

The dues structure of NEDA is as follows:

Associate network support membership is $10. Associate network support membership with quarterly updates is $15. Voting membership in N.E.D.A. is $25. Voting members decide which 3 members will be appointed to the board of directors at the general meeting. (pending constitutional review at July board of directors meeting)

Non US memberships will be asked a surcharge to cover postage and banking fees.

Membership Application

Callsign:

Name:

County:

address:

Home Phone:

City, State or Province:

Zip code:

Work Phone:

Home BBS:

Note: BBS address is used to send club bulletins and meeting announcements. Please include hierarchal address (i.e. K1MEA. #WMA.MA.USA) of a full service BBS, not personal PMS.

Packet connect path to you from N.E.D.A. network:

Can you be reached by this path most evenings?

Non packet email address:

Describe your packet activities:

ARRL ☐

ARES ☐

Other Radio Clubs:

RACES ☐

Membership desired: support ☐ support+quarterly ☐ voting ☐

# of years desired:

Send check for $10 for associate network support membership ("support").
(US funds) $5 additional for quarterly update. ("support + quarterly")
(for each year $25 for voting membership(includes quarterly) ("voting")
desired) to: **NEDA, POBox 563, Manchester NH, 03105-0563**

Applicants from outside the U.S. and Canada should write to the POBox to inquire about postage and exchange rate. Canadian applicants should remit $15 for Support, $20 for Support+Quarterly or $30 for Voting, in U.S. funds. Canadian applicants should also include an additional $5 if paid with a check drawn on any Canadian account. (Avoid the $5 fee and send your payment as a money order for US funds)

$10 of the NEDA membership dues, for the year starting at date of receipt, is for a subscription to the NEDA Quarterly for one year. Return this bill form with remittance.

Packet Survey

Have you used the network?

What's the furthest you've packeted on VHF/UHF terrestrial packet?

Do you own more than 1 TNC?

What kind of terminal or computer do you use for packet?

On what bands do you operate packet?

Are you interested in assisting in network development?

FOR OFFICE USE ONLY:

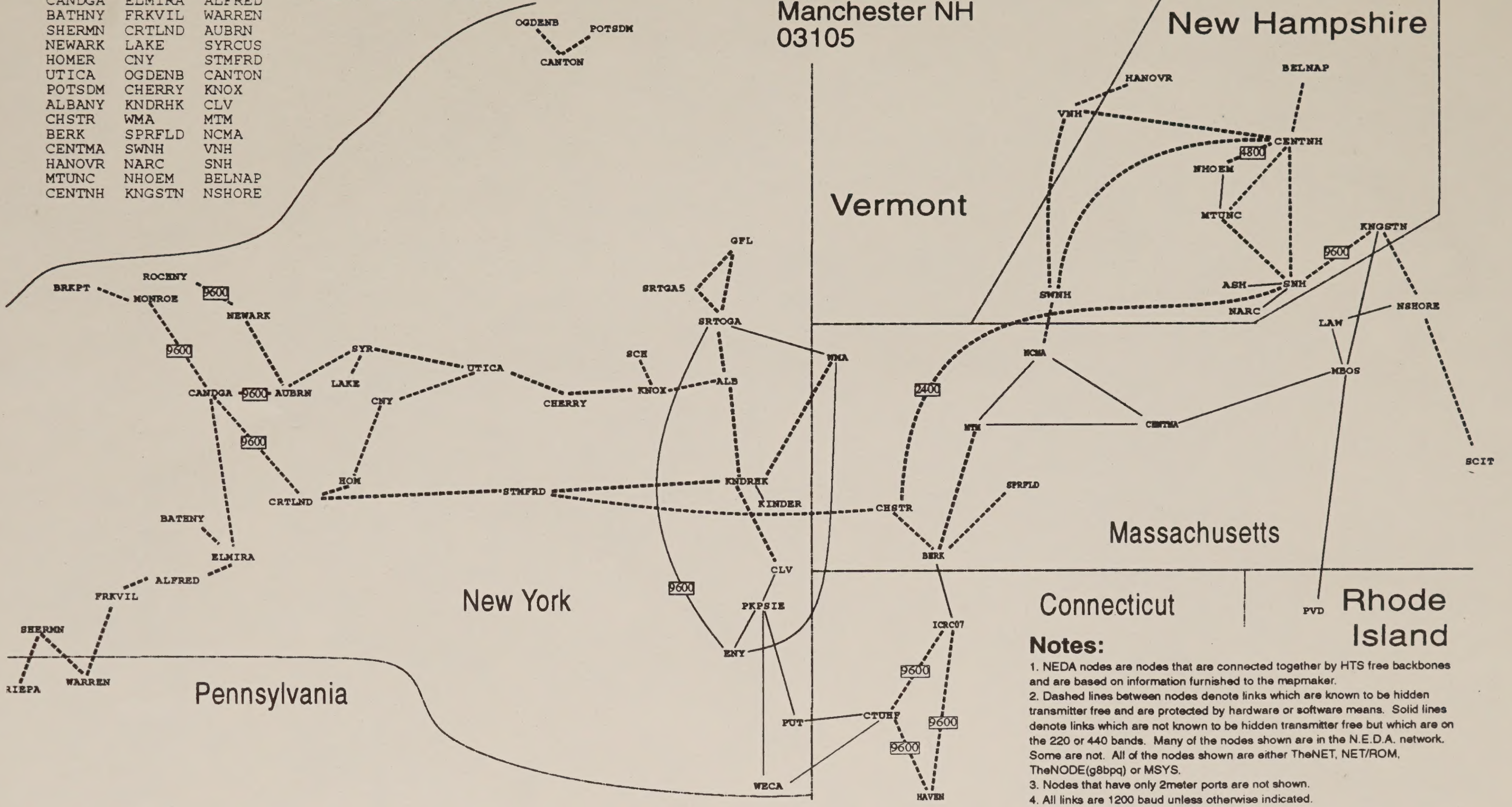
RCT: ___________ CNO: ___________ ACK: ___________ DDP: ___________ DOE: ___________ PKG: ___________

North East Digital Association

packet network
Regional **user port** map
rev 1.33 9/4/91

Send SASE for membership application and info to:
NEDA
Box 563
Manchester NH
03105

NEDA nodes are:
See Note
BRKPT
CANDGA
BATHNY
SHERMN
NEWARK
HOMER
UTICA
POTSDM
ALBANY
CHSTR
BERK
CENTMA
HANOVR
MTUNC
CENTNH
MONROE
ELMIRA
FRKVIL
CRTLND
LAKE
CNY
OGDENB
CHERRY
KNDRHK
WMA
SPRFLD
SWNH
NARC
NHOEM
KNGSTN
ROCHNY
ALFRED
WARREN
AUBRN
SYRCUS
STMFRD
CANTON
KNOX
CLV
MTM
NCMA
VNH
SNH
BELNAP
NSHORE



Notes:

1. NEDA nodes are nodes that are connected together by HTS free backbones and are based on information furnished to the mapmaker.
2. Dashed lines between nodes denote links which are known to be hidden transmitter free and are protected by hardware or software means. Solid lines denote links which are not known to be hidden transmitter free but which are on the 220 or 440 bands. Many of the nodes shown are in the N.E.D.A. network. Some are not. All of the nodes shown are either TheNET, NET/ROM, TheNODE(g8bpq) or MSYS.
3. Nodes that have only 2meter ports are not shown.
4. All links are 1200 baud unless otherwise indicated.

Send corrections and new information to W1JFP @ W1JFP.NH, attn: Maps

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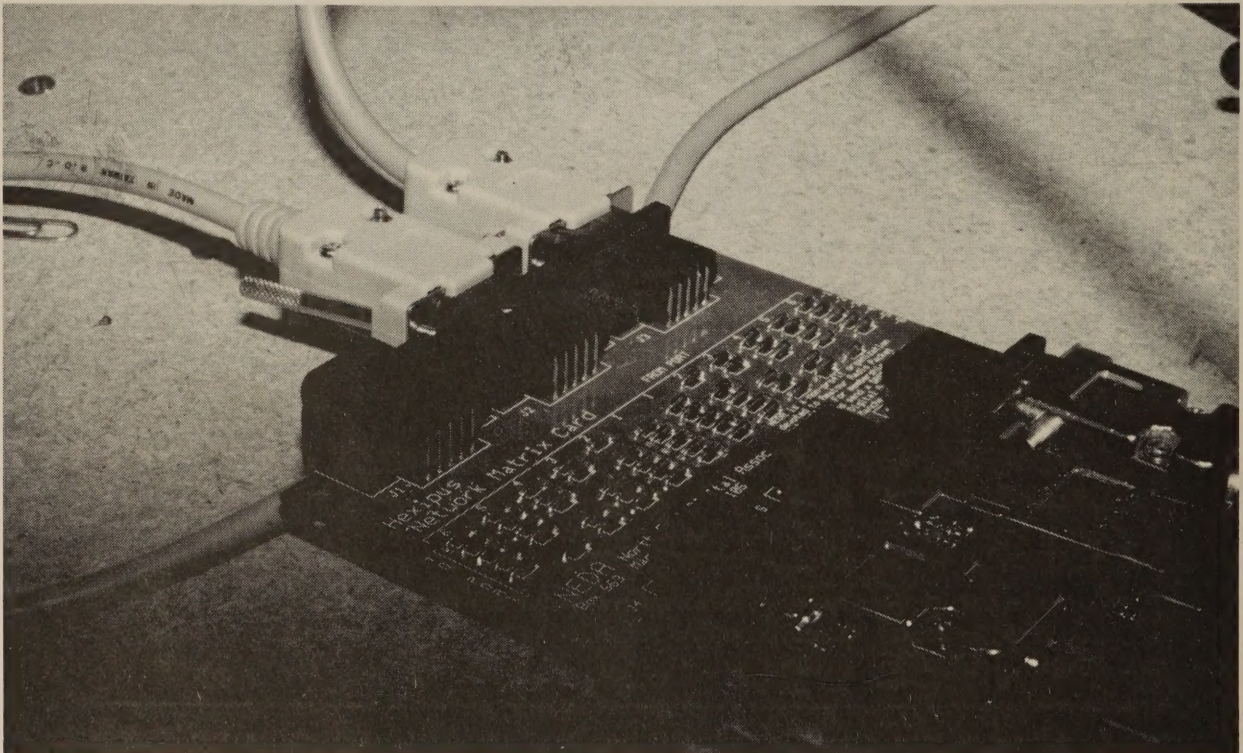
The NEDA Quarterly is the official journal of the North East Digital Association. It is published four times annually. Distribution is around 500 copies including paid members and public relations purposes. Membership at the time of publication was 249.

NEDA is a non-profit club formed for the purpose of promoting free access general purpose amateur radio packet networking.

NEDA's mailing address is :
NEDA - Box 563, Manchester NH 03105



The NEDA Hexipus™ is used to connect up to 6 TNCs together to form a network building block. Order your Hexipus. See the order form on page 53.